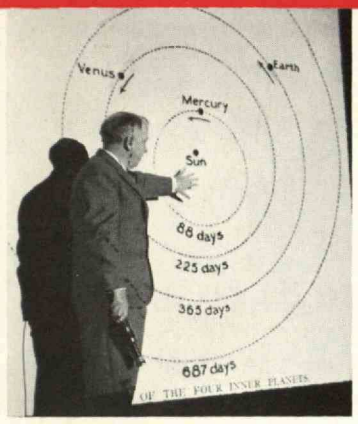
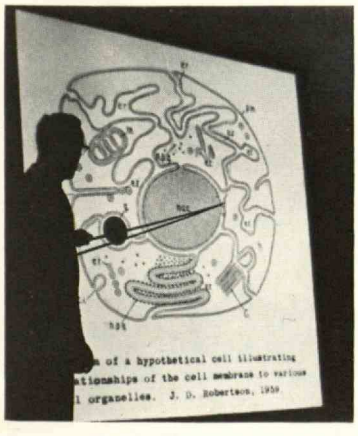
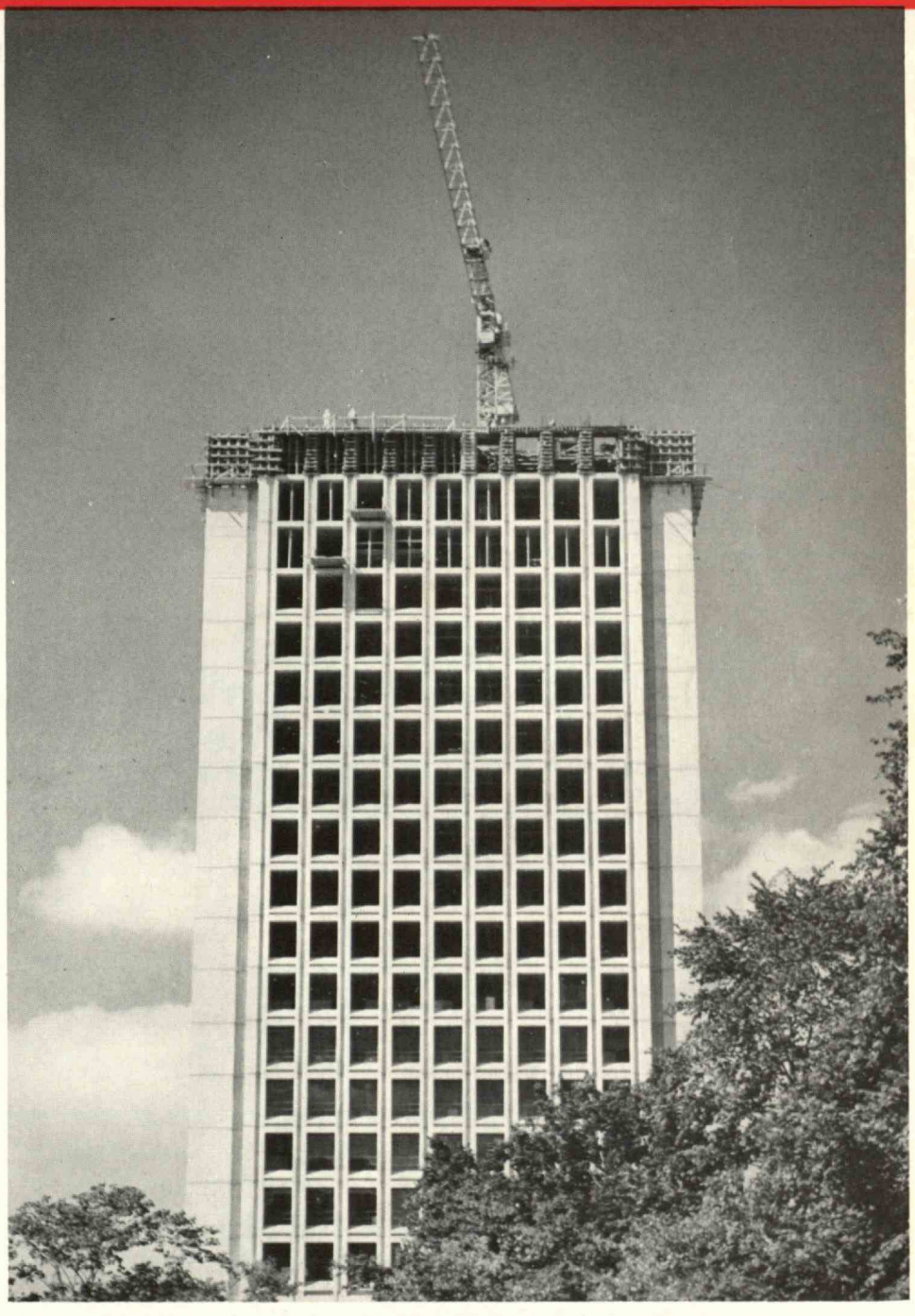
Technology Review

Edited at the Massachusetts Institute of Technology

November, 1963







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technology
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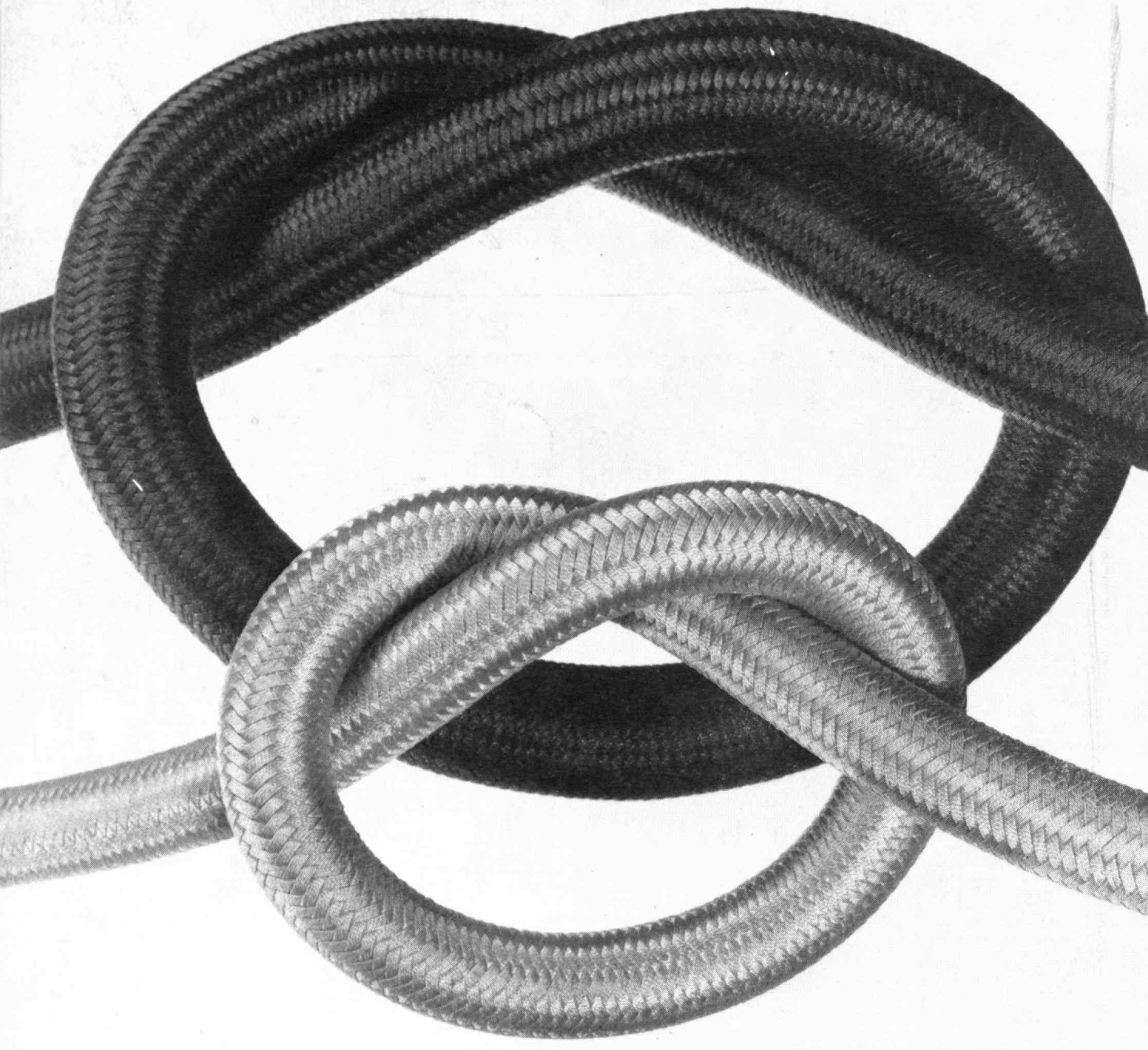
Published by MIT



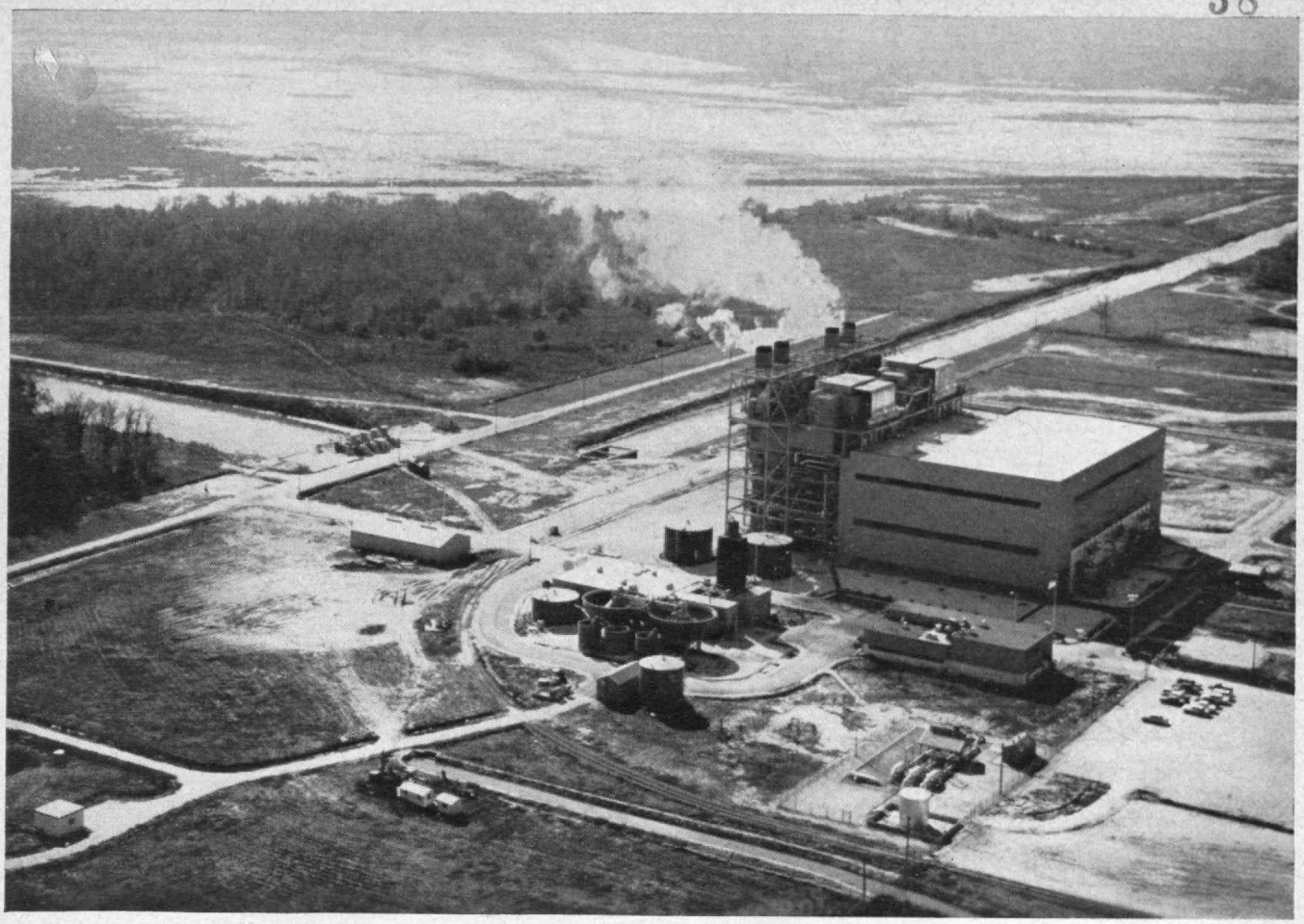
"The cable nobody could build"

It was a fine engineering accomplishment when Kerite was the first to solve the difficult problem of high voltage X-Ray cable. Kerite is now the first to improve that outstanding achievement with a cable of smaller diameter, higher voltage rating, increased safety factor, and long life – all made possible by Kerite insulation and Kerite engineering and by a company devoted exclusively to the manufacture of products of the highest quality for severe and important service.

The Kerite Company, 30 Church St., New York 7, N.Y.

KERITE CABLE

GEARED TO PROGRESS
P I
MEMBER



Stone & Webster completes another power project for Gulf States Utilities Company

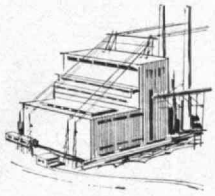
Stone & Webster Engineering Corporation recently completed Unit 2 at Gulf States Utilities Company's Sabine Power Station near Bridge City, Texas. The station, designed and constructed by Stone & Webster, now has a net capability of over 460,000 kw. The "top-fired" boilers are among the first of their kind and allow for upward extension to provide additional furnace volume in the event of future coal firing. Intake water comes from Sabine Lake via a 4 mile canal and is discharged through a 3½ mile canal to the Neches River . . . a system designed to permit a possible 2,000,000 kw station capacity without recirculation of cooling water.

Stone & Webster designs and constructs power stations, petroleum and chemical plants, pulp and paper mills and many other types of industrial plants throughout the world. We would welcome an opportunity to serve you.

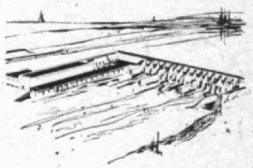
OTHER RECENT EXAMPLES OF OUR DESIGN AND CONSTRUCTION WORK IN THE POWER FIELD.

Rowe, Massachusetts
170,000 kw nuclear station for Yankee Atomic Electric Company

Stony River, W. Virginia
500 Kv transmission system for Virginia Electric and Power Company



Columbia River, Washington
770,000 kw power station at Rocky Reach for Public Utility District #1 of Chelan County



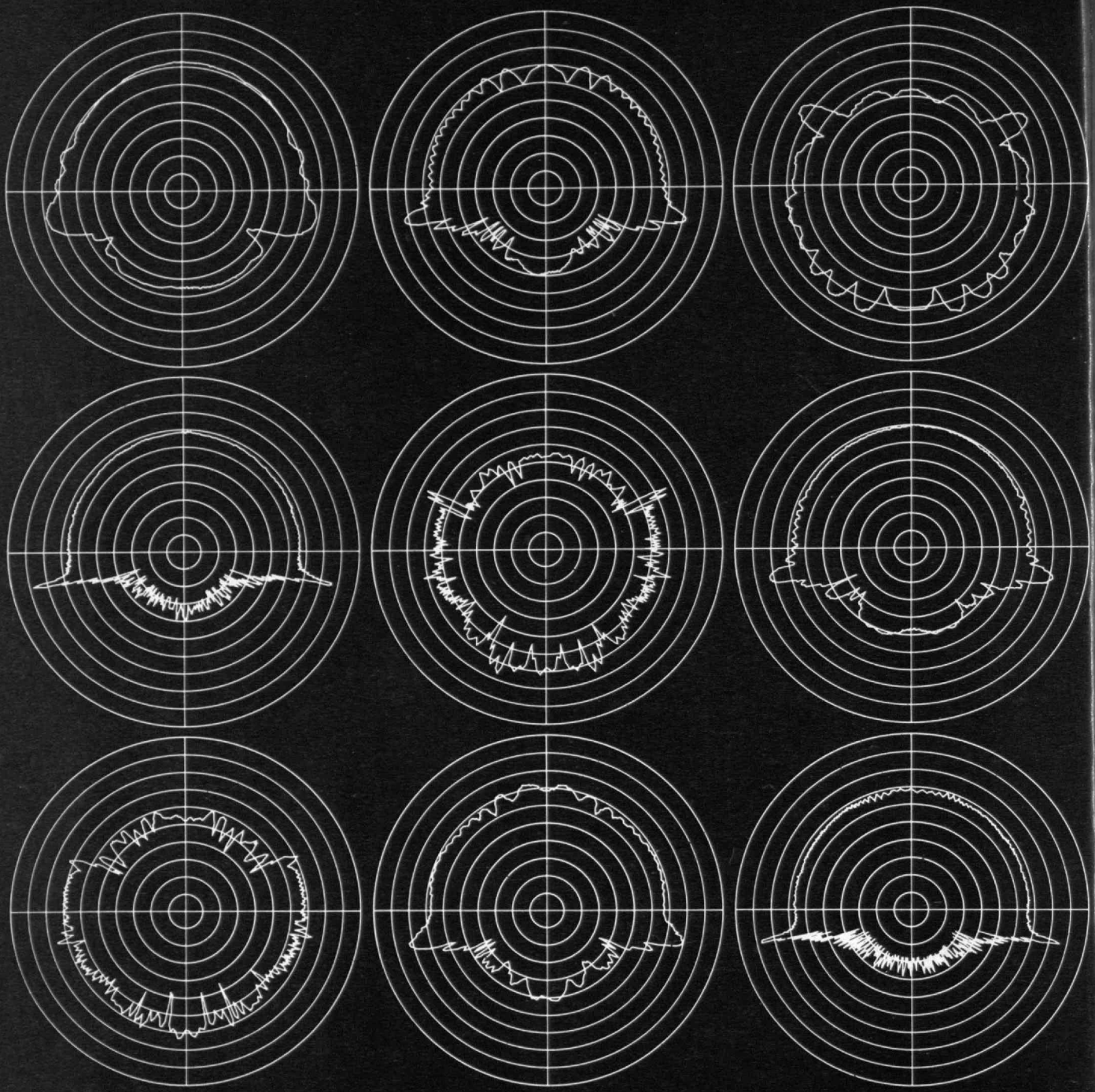
STONE & WEBSTER Engineering Corporation

New York · Boston · Chicago · Houston · San Francisco · Los Angeles · Seattle · Washington, D. C.

Stone & Webster Engineering Limited - London • Stone & Webster Engineering S. A. - Paris • Stone & Webster Engineering N.V. - Amsterdam

Stone & Webster Canada Limited - Toronto • Associated Nucleonics, Inc. - Garden City, N. Y.

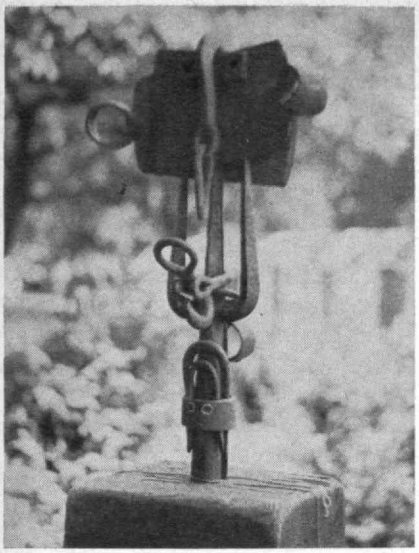
Backscatter Patterns



The Lincoln Laboratory of the Massachusetts Institute of Technology conducts a program of general research in advanced electronics with applications to urgent problems of national defense and space exploration. Research in the area of *Ballistic Missile Defense* is concerned with radar techniques for detection and surveillance, as well as re-entry physics studies aimed at achieving improved target identification and decoy discrimination. All qualified applicants will receive consideration for employment without regard to race, creed, color or national origin. Lincoln Laboratory, Massachusetts Institute of Technology, Box 28, Lexington 73, Massachusetts.

Solid State Physics
Information Processing
Radio Physics and Astronomy
Radar Design
Control Systems
Space Surveillance Techniques
Re-entry Physics
Space Communications

A description of the Laboratory's work will be sent upon request.



"And my boy Larry goes to M.I.T." was the title of this sculpture by Leo Waldmann in the 1963 Boston Arts Festival. It shows a mother with very big ears, a shopping bag, and small fry at her feet, according to Mr. Waldmann.

TECHNOLOGY REVIEW is published monthly from November to July inclusive, on the 27th day of the month preceding the date of issue, by the Alumni Association of the Massachusetts Institute of Technology. All correspondence regarding its editorial contents, subscriptions, advertising, and changes of address should be addressed to:

Room 1-281, M.I.T.,
Cambridge 39, Mass.

The Review's publisher and editor is *Volta Torrey;* business manager, *R. T. Jope, '28;* assistant to the editor, *Ruth King;* and class news editor, *Roberta A. Clark*. Editorial consultants are *J. J. Rowlands, Francis E. Wylie,* and *John I. Mattill*. Members of its staff are *Madeline R. McCormick, Joyce Skinner,* and *Maxine Kenny*.

Officers of the Alumni Association of M.I.T. are: *Robert H. Winters, '33,* President; *Donald P. Severance, '38,* Executive Vice-president; *F. Leroy Foster, '25,* and *Samuel A. Groves, '34,* Vice-presidents; and *Frederick G. Lehmann, '51,* Secretary.

An annual subscription to Technology Review is $4 in the U.S., $4.50 in Canada and elsewhere, and a single copy, 60 cents. Three weeks must be allowed to effect a change of address, for which both the old and the new address of the subscriber should be given.

The office of publication is 10 Ferry St., Concord, N.H., where the Review is printed by The Rumford Press. Second-class postage is paid at Concord, N.H.

POSTMASTER: Please return undeliverable copies to The Rumford Press, 10 Ferry St., Concord, N.H.

Technology Review

Reg. U.S. Pat. Off.

Edited at the Massachusetts Institute of Technology

Volume 66, Number 1

Contents

November, 1963

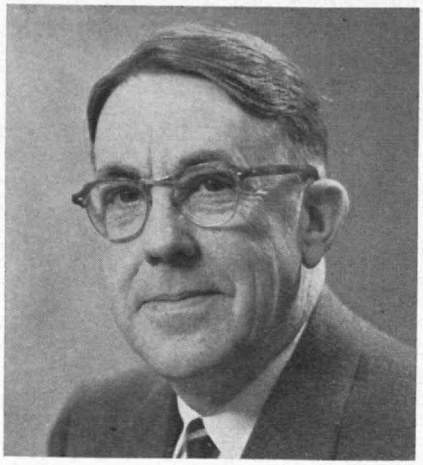
The cover shows the M.I.T. Earth Sciences building now being built, and three speakers at the recent Alumni Seminar. From the top they are Professors Harlow Shapley, William S. von Arx, '55, and Irwin W. Sizer.

Individuals Noteworthy

Visiting Professor

ARTHUR L. SAMUEL, '25, a pioneer in making a computer "learn" from the work given to it, is a visiting professor of electrical engineering at M.I.T. this year. Dr. Samuel taught at the Institute from 1926 to 1928 and at the University of Illinois from 1946 to 1949.

He was with the Bell Telephone Laboratories for 18 years, and since 1949 he has been with IBM. He edits the *IBM Journal of Research and Development,* and is currently on leave from the Thomas J. Watson Research Center in Yorktown, N.Y., where he is consultant to the Director of Research. At M.I.T., he will be closely associated with Project MAC, a major national program having to do with the exploitation of advanced computer systems.



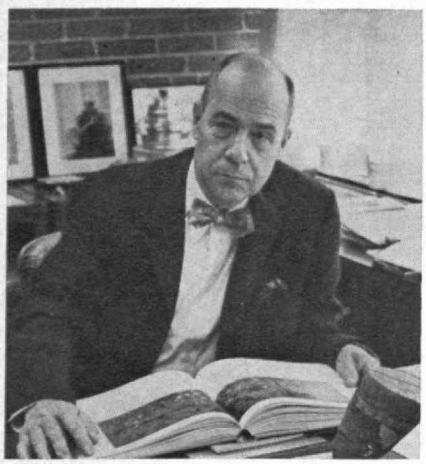
Arthur L. Samuel, '25

Emeritus Professor

EDWARD L. BOWLES, '22, one of the most important behind-the-scenes figures in World War II, retired from the M.I.T. Faculty last summer but planned to continue to lecture in the School of Industrial Management on the theory and practice of "getting things done."

Secretary of War Henry L. Stimson called him to Washington in 1942 as an adviser on radar, communications, and related electronic developments. The next year he also became consultant to General H. H. Arnold of the Air Force. Remaining in Washington until 1947, he also worked closely with General George Marshall and Secretary of War Robert P. Patterson, made reorganization and policy studies for General Dwight D. Eisenhower, and received the Distinguished Service Medal from President Truman.

An electrical engineer by profession, he returned to Cambridge in 1952 as Consulting Professor of Industrial Management, but continued to serve the nation in numerous important capacities. In recent years, Professor Bowles has spent much of his time as a general consultant to the president of the Raytheon Company.



Edward L. Bowles, '22

C. M. Spofford: 1871-1963

A NOTED MEMBER of the M.I.T. Faculty for several decades, Charles Milton Spofford, '93, Hayward Professor of Civil Engineering, Emeritus, died in Newton Center last July 2.

Born in Georgetown, Mass., in 1871, he did both his undergraduate and graduate work at the Institute and joined its teaching staff in 1896. He was head of the Department of Civil Engineering from 1911 to 1933 and chairman of the Faculty from 1925 to 1927. His *Theory of Structures* was for many years a widely used text, he was the recipient of many awards, and the Spofford Room in the Civil Engineering Department was named in his memory.

Professor Spofford was a founder of Fay, Spofford and Thorndike, and participated in numerous major engineering undertakings. He was a past vice-president and director of the Society of Civil Engineers, and a member of the Institute of Civil Engineers, the International Association for Bridge and Structural Engineering, the American Society for Testing Materials, the American Railway Engineering Association, and the Boston Society of Civil Engineers.

He is survived by his daughter, Mrs. Walter J. Beadle, and three grandchildren. Mr. Beadle, '17, is a life member of the M.I.T. Corporation.

Wm. L. Stewart, Jr.: 1897-1963

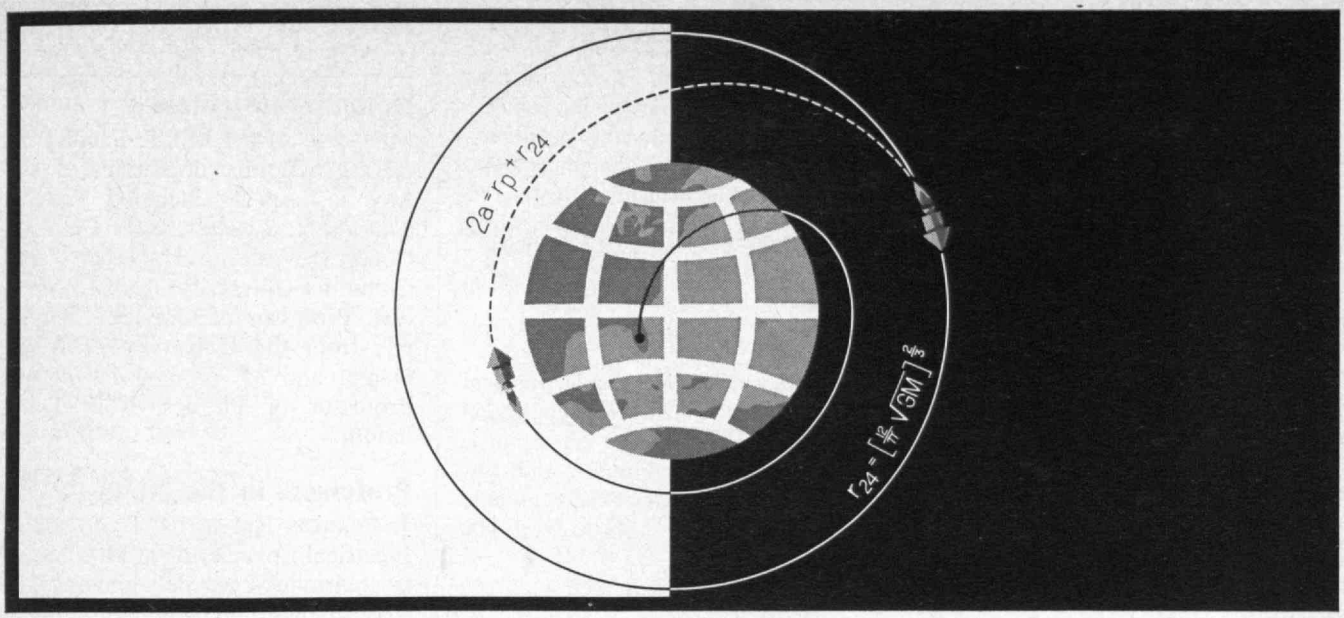
A LIFE MEMBER of the M.I.T. Corporation, William Lyman Stewart, Jr., '23, died last August 30. Mr. Stewart was chairman of the Union Oil Company of California, which he had joined as a research assistant in 1923. He was also a director of several petroleum, oil and gas corporations and other companies, a trustee of a number of educational and charitable institutions, and at the time of his death a member of the Executive Committee of the Stanford Research Institute.

A native Californian, he served his country in World War I as a Second Lieutenant in the Aviation Section of the Signal Corps and in World War II as Commander in the Coast Guard Reserve. He was also chairman of the Refining Committee, District V Petroleum Administration for War, and a member of the Petroleum Industry War Council.

Long active in M.I.T. affairs, he became an alumni term member of the Corporation in 1952, and a life member in 1956. He also served on a number of Visiting Committees, including Industrial Management, Humanities, Mathematics, Student Affairs, and Sponsored Research, and had an important role in three of the Institute's fund drives. During the Second Century Fund he was both honorary chairman and major gifts chairman in the Los Angeles area.

He is survived by his wife, Julia (Valentine) Stewart; a daughter, Margaret Ann; and a son, William Lyman, 3d.

(Continued on page 6)



scientists, engineers, mathematicians...
transfer with minimum energy

Use of the Hohmann formulae to transfer bodies from orbit to orbit makes it possible to place satellites in synchronous orbits on equatorial planes. AC-Milwaukee is seeking scientists, engineers and mathematicians to help develop the guidance systems and hardware that will achieve synchronous orbits.

AC's highly skilled scientific team has played an important role in advancing the state of the art in inertial guidance theory, development and production. Singular successes have been achieved by AC in the development of the Apollo Command Module guidance and navigation system, the inertial guidance systems for Titan II and Titan III, plus other guidance and navigation systems and components for space vehicles, missiles and aircraft.

Specific openings for all AC locations—AC-Milwaukee, AC-Los Angeles and AC-Boston—are listed below. For more information, send your résumé to G. T. Raasch, Director of Scientific and Professional Employment, Dept. 5753, AC Spark Plug Division, Milwaukee 1, Wisconsin.

Milwaukee (Systems Design, Development, Manufacturing)

SYSTEMS ANALYTICAL ENGINEERS—Perform analytical studies of inertial guidance systems, including analysis of system performance requirements, writing system model and error allocation specifications, conducting system simulations on digital and/or analog computers, conducting trajectory studies, and preparing guidance equations. BS, MS or PhD in EE, math and physics plus 2-5 years experience depending upon education.

SYSTEMS MECHANIZATION ENGINEERS—To design and mechanize inertial guidance systems or subsystems. BS, MS or PhD in EE, math or physics with minimum of 2 years aircraft or fire control experience employing closed loop systems, switching circuits and digital techniques.

CIRCUIT DESIGN & ANALYSIS ENGINEERS—To design and/or analyze servo amplifiers, DC operation amplifiers, power converters, feedback amplifiers and pulse circuits. Will work in the area of inertial measurement unit electronics. BSEE plus 3-5 years experience in above field required.

DIGITAL COMPUTER ENGINEERS—Logic design, evaluation of logic techniques, evaluation of memory storage, development of programming format and define computer subsystem functional block diagrams and input-output devices. BS or MS in EE or math and physics and 3-7 years experience in logic circuit design of digital computers.

GYRO ENGINEERS—Thermal and stress analysis of gyro instruments. Analytical ability and 2-5 years gyro design experience necessary. BS or MS in ME or EE.

RADAR SPECIALISTS—Circuit design and analysis of airborne radar systems. Prepare functional block diagrams and define subsystems, analyze and test error budgets, perform analog and digital computer simulations including interfacing of associated subsystems and aircraft performance characteristics. BS or MSEE and 5-10 years radar-radio systems experience.

SCIENTIFIC PROGRAMMERS—Concerned with simulation of guidance and control systems, electronic system design and logic designs. Will perform satellite and trajectory studies, numerical and statistical analysis and systems calibration. BS or MS in engineering, physics or math with 1-3 years experience.

SYSTEMS ENGINEERS—To assist in interface of Apollo airborne and ground support equipment, including the development of test circuits to ensure proper GSE checkout before interface. BSEE, plus 2-3 years related experience required.

MECHANICAL DESIGN & DEVELOPMENT ENGINEERS—To assist in the design and development of Apollo ground handling equipment, Titan GSE consoles, drawers and other hardware. BS or MSME and 2-3 years related experience required.

EQUIPMENT DESIGN ENGINEERS—Design and development of transistorized electronic airborne and GSE equipment on Titan and Apollo projects. BSEE or ME with 2-5 years design experience.

DEVELOPMENT ENGINEERS—Perform engineering development, product support and coordinate design changes. BSEE or ME required.

Boston Advanced Concepts Laboratory (Research & Development)

INERTIAL & SPACE SYSTEMS ENGINEERS—To engage in the analysis, synthesis and mechanization and/or evaluation of advanced inertial navigation systems. Will perform optimization studies, error analyses and systems configuration studies in the field of space navigation, avionics, and attitude control systems. Advanced degree or BS with analytical systems background required. Two or more years experience in inertial systems preferred.

DIGITAL SYSTEMS ENGINEER—To engage in the adaptation of digital techniques to inertial navigation and avionics systems. BSEE and 3-5 years experience in the design of digital control systems required.

MECHANICAL ENGINEER—Design of miniature inertial platforms and gimbal systems. BS and 3-5 years in above field and inertial instrument application.

SR. MECHANICAL ENGINEER—Responsible for the development of inertial instruments through the use of analysis and experimental verification. BSME plus 3-5 years experience in the design and development of precision electromechanical devices.

ELECTRONIC ENGINEER—To design transistor feedback and servo amplifiers, and low level switching circuits. BS or MS and 3 or more years experience in the above field desirable.

SR. METALLURGIST—To work in an expanding group conducting development programs and evaluation of both metallic and non-metallic materials as applied to inertial sensing devices. BS or MS with 3-5 years experience in metallurgical or related area.

ELECTRONIC ENGINEER—To design and develop semiconductor pulse circuits, logic circuits, digital analog circuits and precision DC amplifiers, BS or MS plus 3-5 years experience in above field. Experience in the area of precision electrical measurement desirable.

MATHEMATICAL ANALYSTS—To perform analysis as required in the development of inertial components and systems. BS or MS in applied mathematics plus 1-3 years experience in the development of inertial components and systems. BS or MS in applied mathematics plus 1-3 years experience in the field of mathematical analysis.

PHYSICISTS & ENGINEERS—Excellent positions are available for Senior Physicists and Engineers preferably having advanced degrees and experience in the theoretical and experimental development of precision devices. The particular area of investigation relates the application of mechanics, electricity, nucleonics and physical phenomena to inertial measurement components such as gyros and accelerometers.

Los Angeles Advanced Concepts Laboratory (Research & Development)

SENIOR SCIENTIFIC PROGRAMMERS—To assist in trajectory analysis and guidance simulation problems. Strong mathematical background and experience on 7090 desired.

SENIOR MECHANICAL ENGINEER—Design of inertial guidance system hardware. BS or MSME with extensive background in thermodynamics and a minimum of 5 years related experience required.

AC SPARK PLUG
The Electronics Division of General Motors
An Equal Opportunity Employer

Individuals Noteworthy

(*Continued from page 4*)

Honorary Doctorates

MEMBERS of the M.I.T. Faculty receiving honorary doctorates of science last spring included Provost *Charles H. Townes,* from Clemson College, Wesleyan University, and Columbia University; *John C. Sheehan,* Professor of Organic Chemistry, from the University of Notre Dame; and *M. Stanley Livingston* Professor of Physics, from Dartmouth.

Professors in the News

J. FRANCIS REINTJES, Professor of Electrical Engineering at M.I.T., will be chairman of a symposium on "The Role of Instruments and Equipment Use in Science Research Program Planning and Management," at the Cleveland meeting of the American Association for the Advancement of Science on December 30. . . . *Gyorgy Kepes,* Professor of Visual Design, will be a visiting professor at Harvard in the spring term. . . . *Albert G. Hill,* Professor of Physics, has become a director of P. R. Mallory & Company, Inc. . . . *Jule G. Charney,* Professor of Meteorology, participated in the Third Technical Conference on Hurricanes and Tropical Meteorology in Mexico last June.

(*Continued on page 10*)

TOP ROW (left to right): Australia, Switzerland, Great Britain, India, Mexico, New Caledonia, Venezuela, Panama, Italy, Japan, Puerto Rico, British Guiana, Canada, France, Ghana. MIDDLE ROW: Thailand, Malaya, Philippines, South Africa, Brazil, Pakistan, Hong Kong. BOTTOM ROW: Argentina, Norway, Indonesia, Greece, Sweden, New Zealand, Colombia, Nigeria.

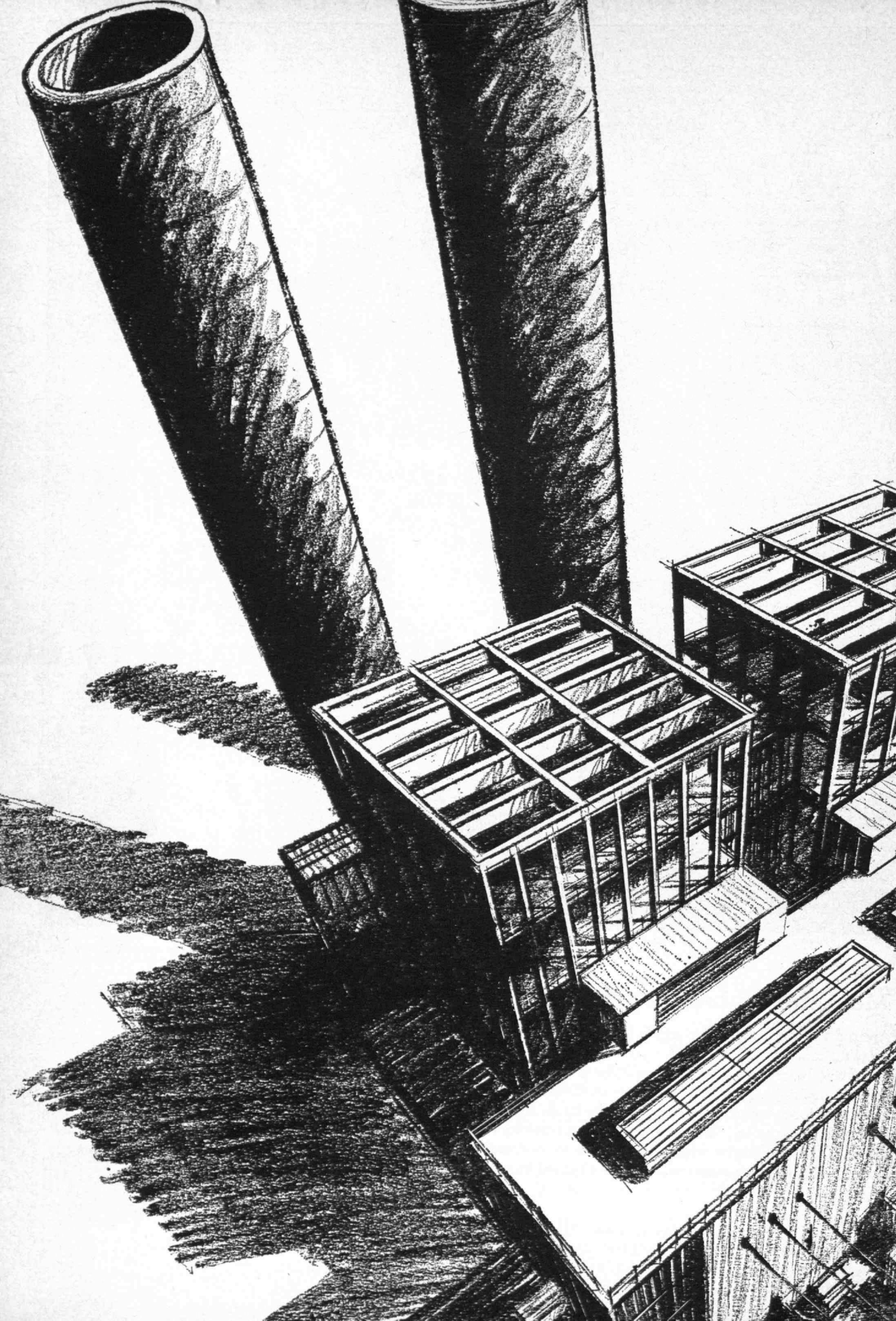
Meet the ambassadors

Around the world, Union Carbide is making friends for America. Its 50 affiliated companies abroad serve growing markets in some 135 countries, and employ about 30,000 local people. ▶ Many expressions of friendship have come from the countries in which Union Carbide is active. One of the most appealing is this collection of dolls. They were sent here by Union Carbide employees for a Christmas display, and show some of the folklore, customs, and crafts of the lands they represent. "We hope you like our contingent," said a letter with one group, "for they come as ambassadors from our country." ▶ To Union Carbide, they also signify a thriving partnership based on science and technology, an exchange of knowledge and skills, and the vital raw materials that are turned into things that the whole world needs.

UNION CARBIDE

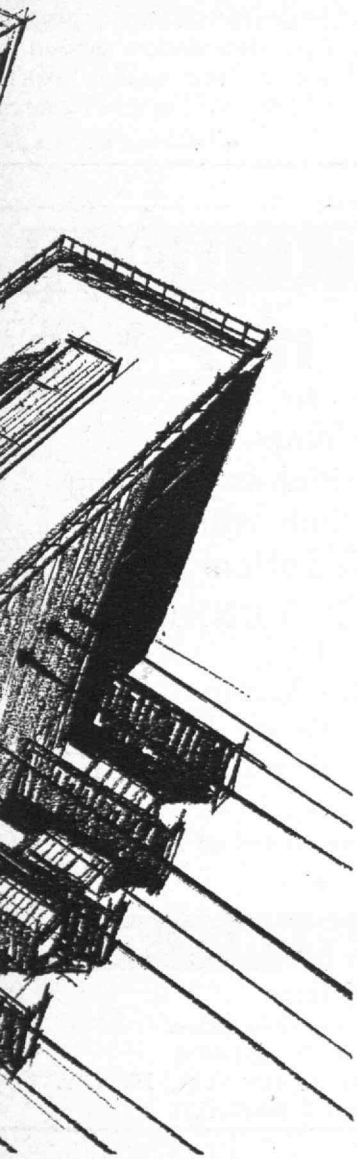
A HAND IN THINGS TO COME

WRITE *for the booklet, "International Products and Processes," which tells about Union Carbide's activities around the globe. Union Carbide Corporation, 270 Park Avenue, New York, N. Y. 10017.*



Keystone

Major milestone in American power practice to use C-E boilers



The Keystone Generating Station is at the heart of a $350,000,000 power plant and transmission line expansion program — one of the largest and most important ever undertaken by America's investor-owned utility industry. Companies of the Pennsylvania-New Jersey-Maryland Interconnection and the Allegheny Power System are participating in the program. Consolidated Edison Company of New York is planning an interconnection with the PJM pool in upstate New York. When complete, the program will include eighteen investor-owned electric utilities. These groups serve more than thirty million people in eight eastern states and the District of Columbia.

The Keystone Electric Generating Station, to be erected in the coal fields of western Pennsylvania, is the larger of two new power plants which will be built as part of the program. It will be owned by three of the companies in the Pennsylvania-New Jersey-Maryland Interconnection Group. These companies are: Jersey Central Power and Light Co., Pennsylvania Power & Light Co. and Philadelphia Electric Co. The output of the plant is to be shared by the three owning companies and by Public Service Electric and Gas Co., Atlantic City Electric Co., Baltimore Gas & Electric Co., and Delaware Power & Light Co.

The Keystone Station, which will provide over 75 per cent of the program's electric power, will contain two C-E Sulzer Combined Circulation Steam Generators. The purchase of these two units constitutes the largest single boiler contract ever let by the U. S. electric utility industry. The boilers will provide the energy to generate 1,800,000 kilowatts of power which will flow at 500,000 volts through more than 600 miles of transmission lines stretching from West Virginia to major eastern load centers. Each of the two C-E Sulzer Combined Circulation units will deliver supercritical pressure steam to a turbine throttle at 3,500 pounds per square inch pressure.

Keystone Station Consulting Engineers: Gilbert Associates, Inc., Reading, Pennsylvania.

C-426-B

COMBUSTION ENGINEERING

General Offices: Windsor, Connecticut
New York Offices: 200 Madison Avenue, New York 16, N. Y.

All types of steam generating, fuel burning and related equipment; nuclear reactors; paper mill equipment; pulverizers; flash drying systems; pressure vessels

Individuals Noteworthy

(Continued from page 6)

Robert M. Kimball: 1909-1963

THE SECRETARY of the Institute, Robert M. Kimball, '33, died last July 24 after 30 years' service to the M.I.T. Administration.

Born in Lawrence, Mass., he was graduated from Lawrence High School and Phillips Academy. He joined the M.I.T. staff, immediately after being graduated from the Institute, as an assistant in the Registrar's Office. He subsequently served as assistant registrar, assistant director of admissions, personnel officer, administrative and executive assistant to the President, and director of the Division of Business Administration. He had special responsibility as Secretary of the Institute for relationships with Visiting Committees and the Committee on Development, and played a vital role in Second Century Fund work.

During World War II he helped the Army Air Forces and the U.S. Navy establish meteorological and aerological programs, and from 1948 to 1950, on leave from M.I.T., he was administrative associate director of the Los Alamos Laboratory of the Atomic Energy Commission. He was a trustee and treasurer of Phillips Academy, Andover.

He is survived by his wife, Mrs. Cynthia Ferris Kimball; a sister, Miss Ruth F. Kimball; four children, Mrs. Gretchen Jamieson, Thomas M. Kimball, '59, Mrs. Helen Elizabeth Jones, and Miss Laurie Playfair Kimball; his former wife, Mrs. Barbara Playfair Kimball; and three grandchildren.

Houlder Hudgins: 1900-1963

AN M.I.T. Professor of Industrial Management since 1955, Houlder Hudgins, died last July 20.

Born in Brooklyn, he studied at Cornell and taught there until 1927. He then began a noteworthy career in business, during which he was controller and assistant general manager of the Mandel Brothers store in Chicago, merchandise manager of Montgomery Ward Company, executive vice-president of the Alexander Smith Company, and executive vice-president of Galen Van Meter, Inc. He was director of purchases for the War Production Board and vice-chairman of the Joint Armed Services Board of Procurement Policy during World War II.

At M.I.T., his teaching and research were concerned with the formation and execution of corporate policy. He was a member of the Massachusetts Economic Stabilization Board, the American Management Association, the American Ordnance Association, the Navy League, and the Newcomen Society.

Professor Hudgins is survived by his wife, Vallie Katrin Hudgins; a son, John W., of Boston; and a daughter, Mrs. Alan Helgesson of Mountain View, Calif.

Ford Fellows

NEWLY NAMED Ford Foundation Post-doctoral Fellows at M.I.T. this year included seven Alumni: *Charles A. Berg, Jr., '56, Arthur E. Bergles, '57, Harry B. Lee, Jr., '57, Russell R. Pfeiffer, '60, A. Edward Profio, Jr., '53, Mikio Suo, '60,* and *Thomas F. Weiss, '59.* Thirty-nine young engineering teachers now receive Ford Foundation support at the Institute while gaining experience in both teaching and research.

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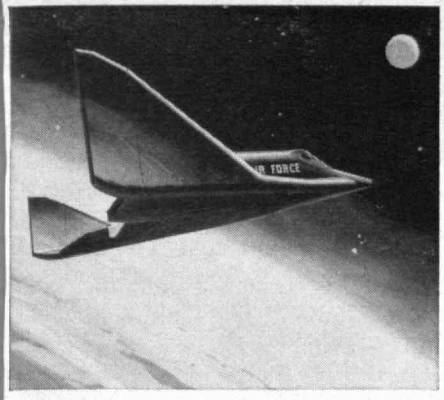
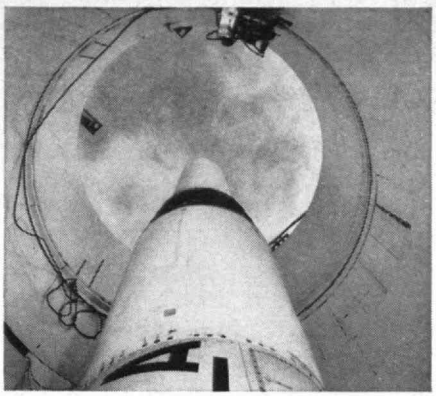


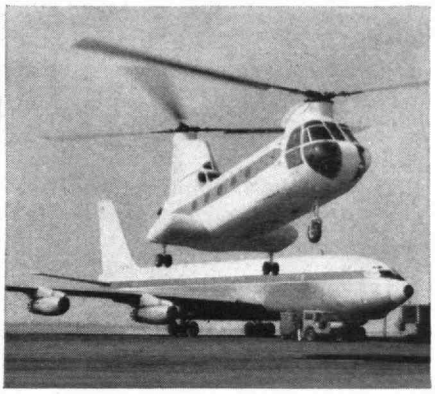
System contractor: DYNA-SOAR



System integration: MINUTEMAN

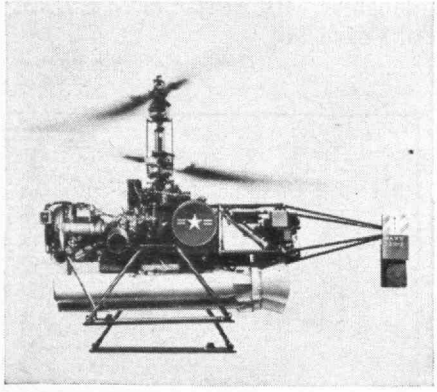
Space booster development: SATURN S-1C

New Boeing 727 short-range jetliner

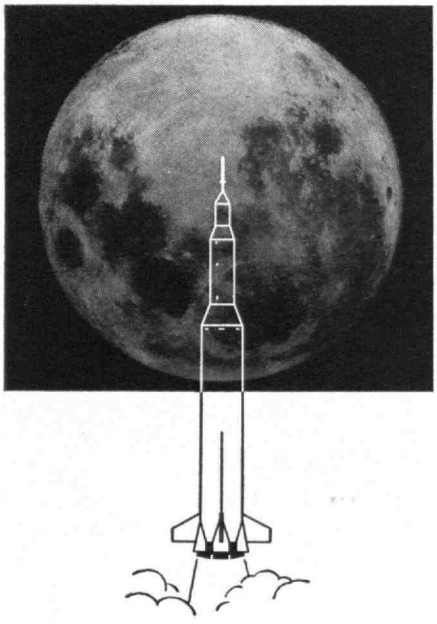


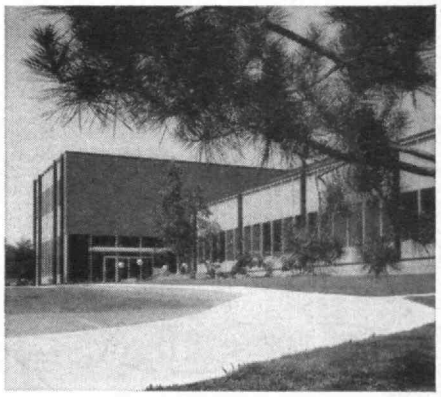
Boeing 707 with Boeing-Vertol 107

Boeing KC-135 jet tanker-transport



Boeing turbines power helicopters





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Individuals Noteworthy

(*Continued from page 10*)

In Civil Engineering

RICHARD L. SAMPSON, '59, a leader in his class as an undergraduate, has become administrative officer of the Department of Civil Engineering. He received a master's degree in business administration from Harvard in 1961, and was with Martin-Orlando before returning to the Institute. In addition to his administrative work, Mr. Sampson will participate in teaching and research which will include work in the area of critical path scheduling and PERT.

In Electrical Engineering

JOHN A. TUCKER has become administrative officer of the M.I.T. Department of Electrical Engineering after serving as assistant to its Head for several years. Mr. Tucker was educated at Northeastern and Yale universities, and employed by the Bell Telephone Laboratories, Inc., and the New England Telephone and Telegraph Company, before joining the M.I.T. staff in 1956.

ROTC Head

COLONEL IRVING W. FINBERG, '31, who returned to M.I.T. three years ago as head of the Army ROTC unit, retired July 31 after 32 years of military service. Succeeding him as Professor of Military Science is Lt. Colonel James W. Gilland.

Colonel Finberg plans to continue studies now at M.I.T. towards a master's degree in City Planning. A regular army officer in the Corps of Engineers since 1947, he has served in Europe, Africa, and the Far East. He holds the Legion of Merit, the Order of the British Empire, the Italian Cross of Valor, and other military honors.

Colonel Gilland has served in the Army for 19 years. He was graduated from West Point in 1945 and received his master's degree in civil engineering from Texas A & M in 1952. He has had tours of duty in France, Labrador, and Japan.

Liaison Officer

JACK W. CHRISTENSEN, '58, has become an M.I.T. Industrial Liaison Officer. He entered active duty with the Air Force when graduated, completed USAF Pilot Training and Strategic Air Command Combat Training Schools, and was assigned as a combat pilot in SAC. In this capacity, he acquired experience in both conventional and jet aircraft and training in weapon operations.

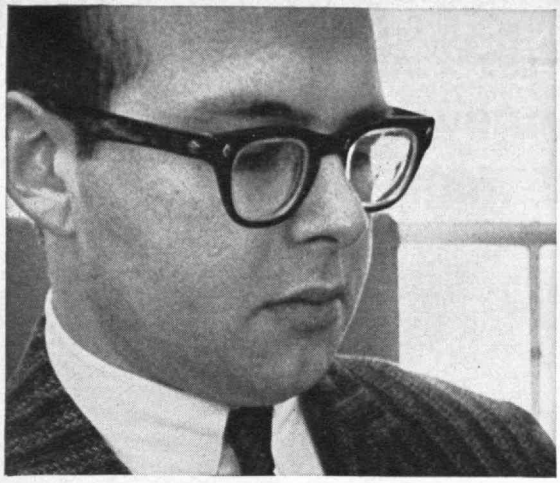
Walter H. James: 1873-1963

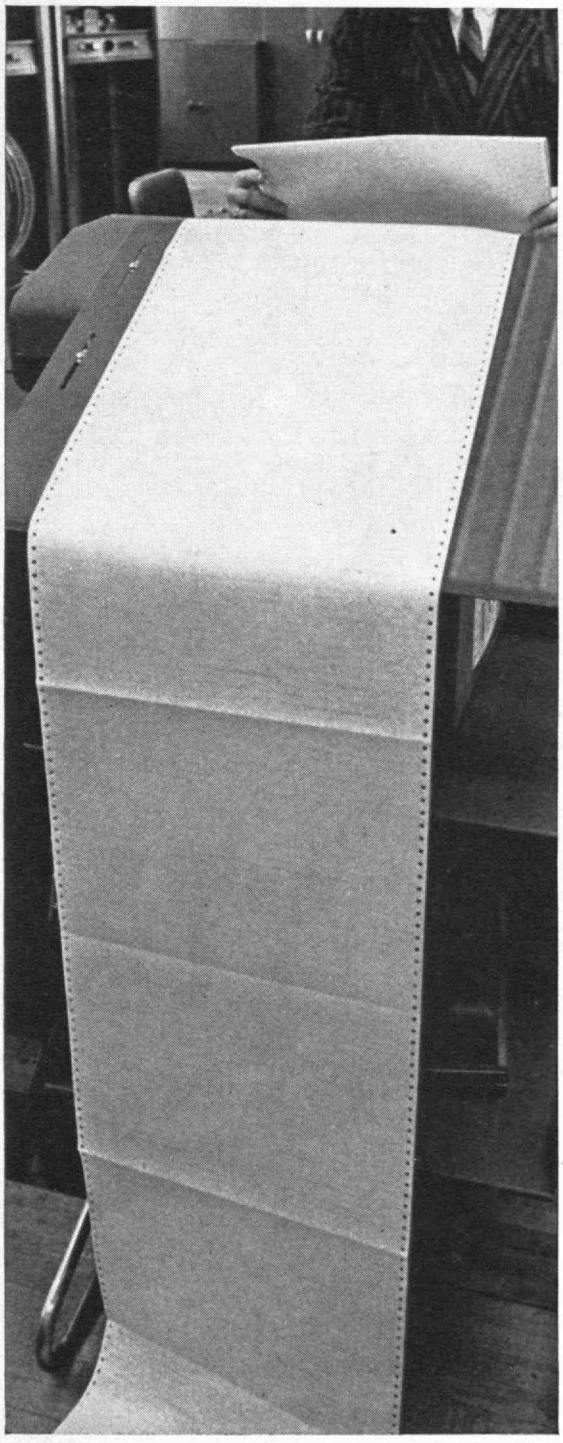
AN M.I.T. professor emeritus, Walter H. James, '96, who taught in the Department of Mechanical Engineering for 38 years, died last September 22.

A native of Portsmouth, N.H., he was employed in industry for four years before joining the Faculty of his alma mater. He taught principles of mechanisms and power plant machinery and was coauthor of several books, including *Elements of Mechanisms,* which was a standard text for many years. After retiring in 1938 he devoted much of his time to making colonial furniture in his shop at Topsfield, Mass.

He is survived by his wife, Mrs. Ida Butterfield James; a son, Arthur S., of St. Petersburg, Fla.; and a daughter, Mrs. Benjamin W. English, of Topsfield.

(*Continued on page 46*)





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One of the experts at American Oil who helps the thinking machine think is Leonard Tenner, 24, a graduate Chemical Engineer from M.I.T. His current assignment: prepare a mathematical model covering the manufacture of gasoline, home fuel and jet fuel from crude oil.

The fact that many gifted and earnest young men like Len Tenner are finding challenging careers at American Oil could have special meaning for you. American Oil offers a wide range of new research opportunities for: Chemists—analytical, electrochemical, physical, and organic; Engineers—chemical, mechanical, and metallurgical; Masters in Business Administration with an engineering (preferably chemical) or science background; Mathematicians; Physicists.

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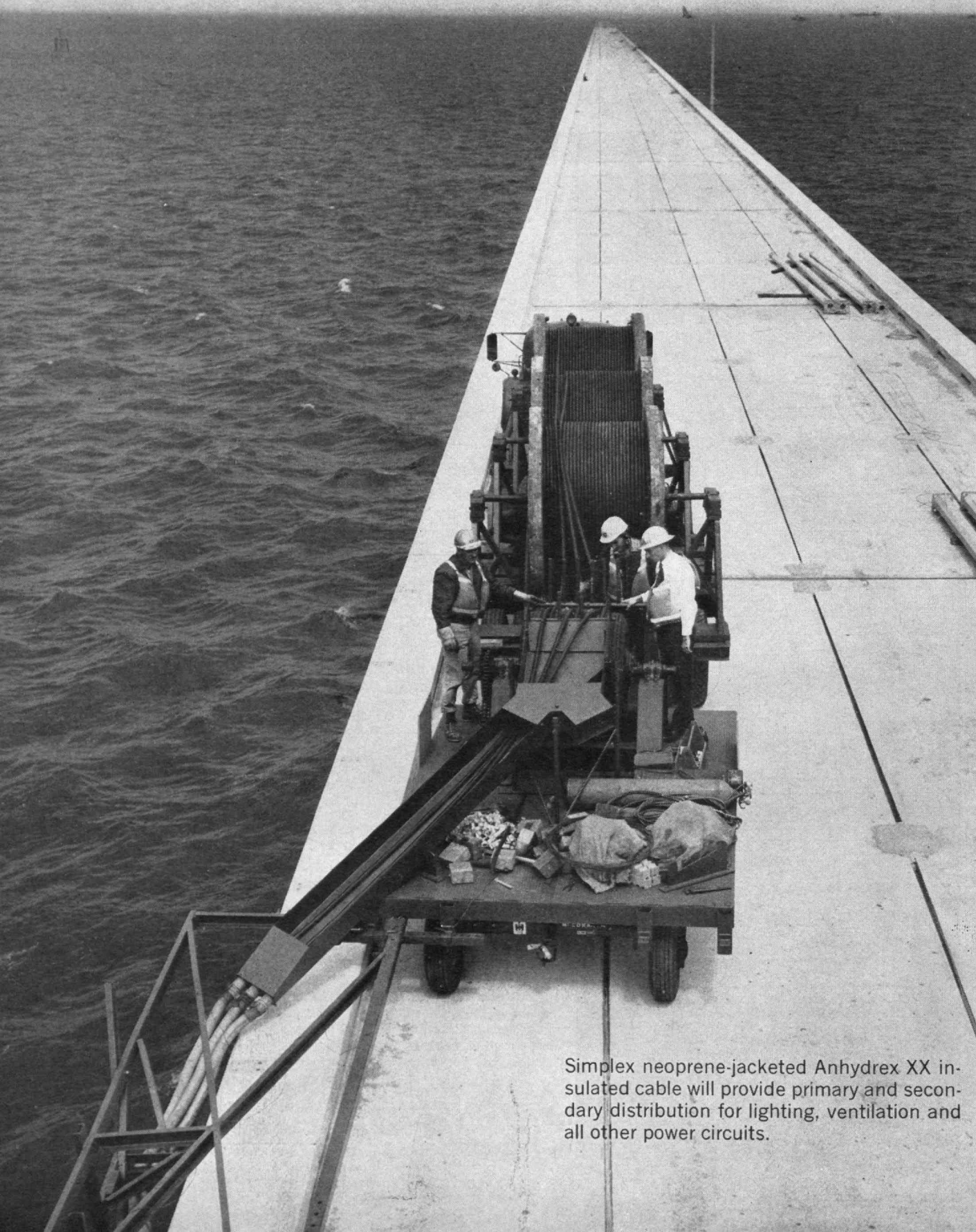

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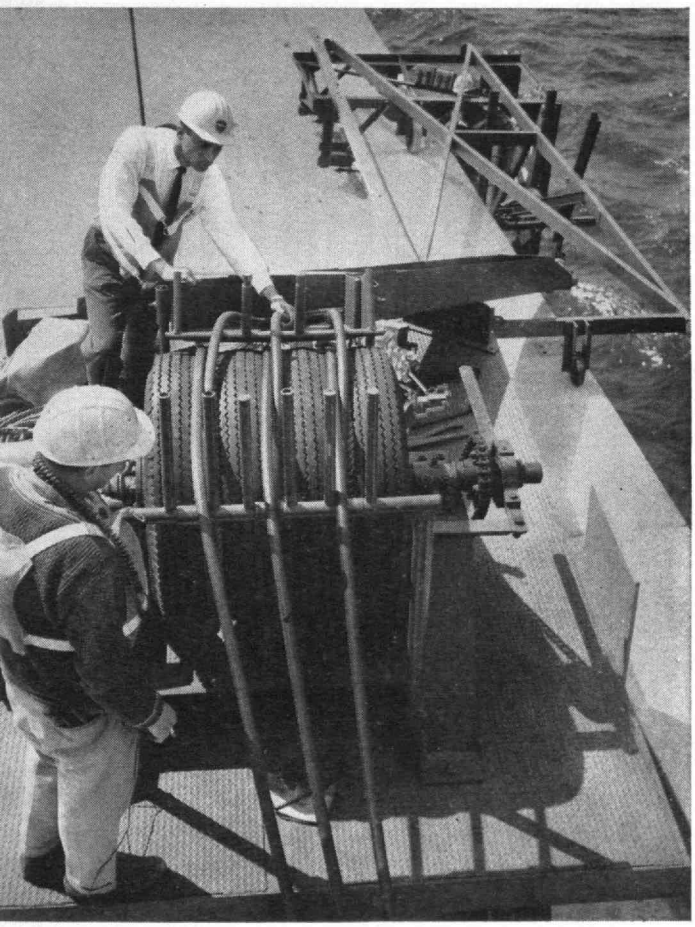
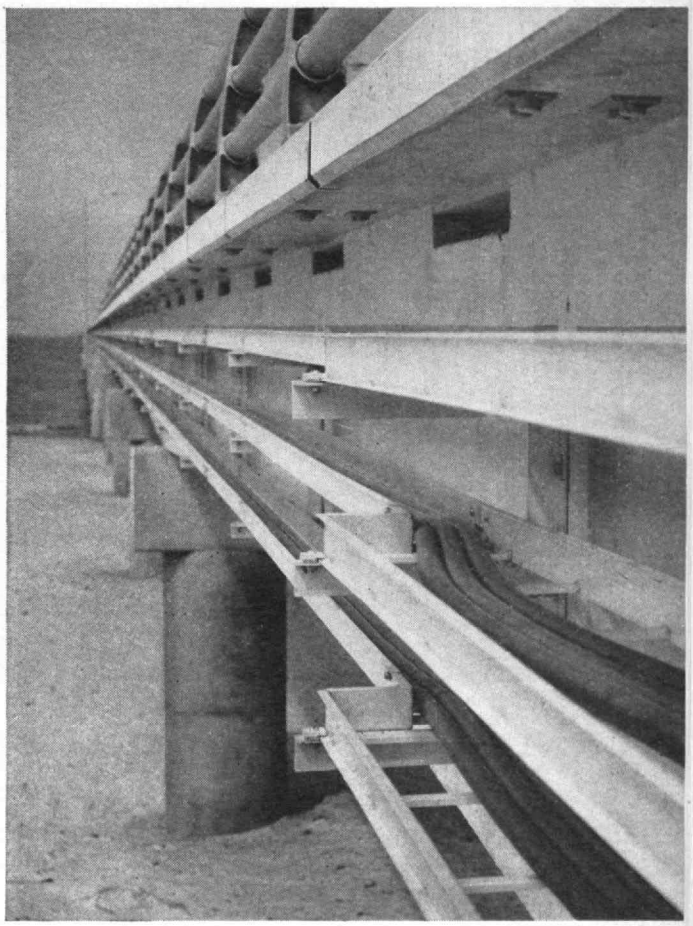


E. C. Ernst, Inc. installs three single conductors of 15 KV Simplex Anhydrex XX insulated neoprene-jacketed cable. Specially designed rig speeds installation of cable.



Cable installation shows unusually severe environment where cable will be exposed to weather, salt spray, direct sunlight and the buffeting of wind-blown sand.

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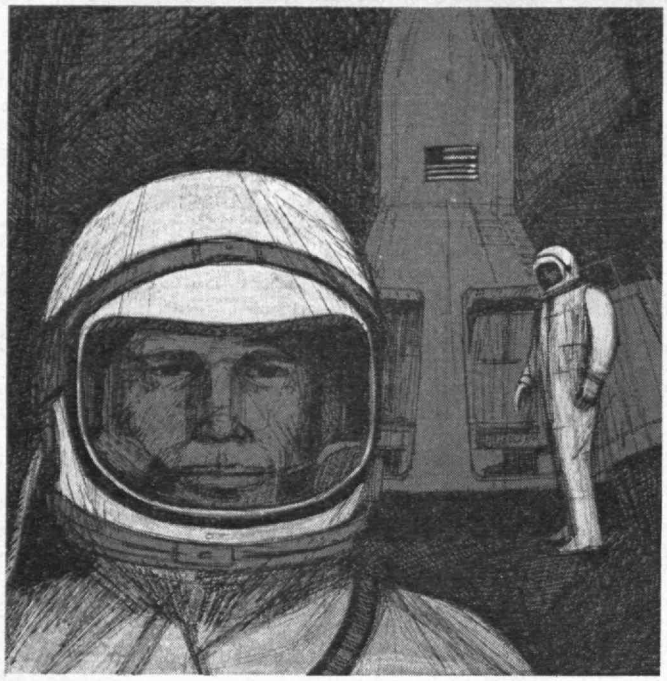

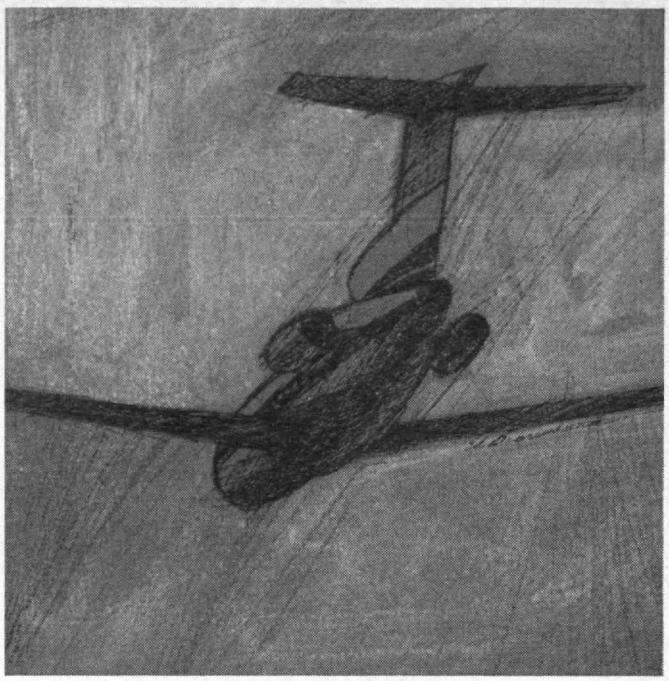

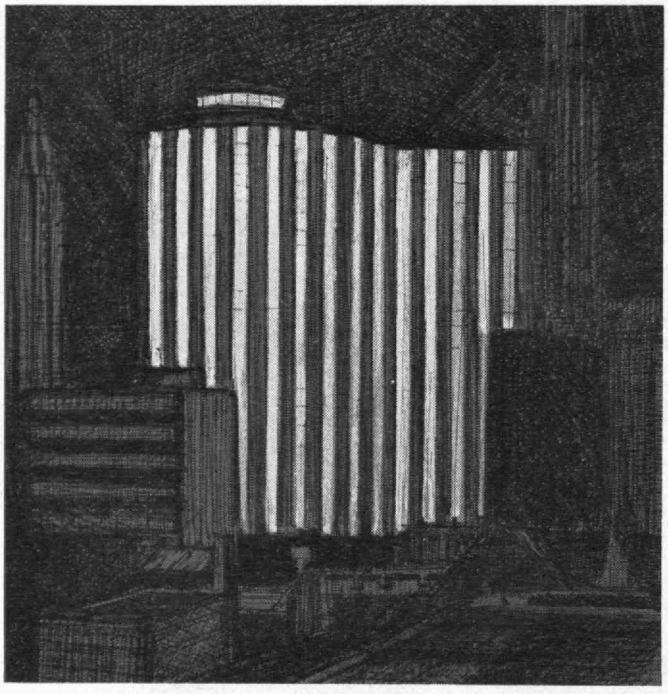

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THE FUTURE IS BUILDING NOW AT GARRETT

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An Inner Frame of Values

The M.I.T. Corporation's Chairman describes nine key strands in the fabric of the Institute

An address given

BY JAMES R. KILLIAN, JR., '26

at M.I.T.'s Third Alumni Fund Conference

YOUR presence at this conference is an earnest of your conviction that the Institute and its mission are important. What qualities of M.I.T. inspire this conviction on your part—and mine? What consecrating influence does it possess that binds thoughtful men to it and that provides for them a fellowship they cherish?

Touching as they do on subtle matters, these questions cannot be briefly and, at the same time, definitively answered, and I do not presume on this occasion to try. Modestly and tentatively-I do venture a few fragmentary suggestions, as a prolegomenon to a future, longer essay. I choose not to dwell upon obvious features, immensely significant as they are, of the Institute today—its surging intellectual activity, its contributions to educational advance, its great size and scope, its vigorous research, its building program, its beneficial relations with industry and its contribution to economic growth, locally and nationally, its many current distinctions of administration, faculty, students, and educational program, its pivotal role in national and world affairs. While these features are directly relevant to the questions I ask as to why M.I.T. commands respect and devoted service, I wish to emphasize and reaffirm traits less obvious and more imponderable and usually unspoken. I speak of that inner frame of values which has given M.I.T. distinctive contours of style and personality, values that touch the heart as well as the mind in binding men together in common cause.

The identification of these qualities is the more difficult because our M.I.T. society, compared to that of most other major institutions, has been marked by reticence, even muteness, in speaking and writing about itself. It has been too busy for introspection. This is an admirable quality, and our reputation must rest on works rather than words. But reticence can be carried too far. Few, if any, institutions have so slight a literature of history, exposition, criticism, and tribute. The late Samuel C. Prescott, '94, after retirement, valiantly wrote his essay in loving recollection, *When M.I.T. Was Boston Tech,* and there are biographies of three Institute presidents. Other than official reports and war records and ceremonial statements, that is about all.

I would hope that at an early date, some gifted, trained historian will write a distinguished, comprehensive history of the Institute, placing it in its historical and social setting. The Institute's world importance now lays us under special obligation to make ourselves more fully understood and to identify those strands of strength and uniqueness that have threaded the fabric of our history and which have significance for other educational institutions.

Let me describe nine of these many strands or themes.

First, I note the Institute's devotion to scholarship and high intellectual standards. Today "the pursuit of excellence" has become an educational shibboleth, with educators the country over preaching the gospel. At M.I.T. this emphasis on excellence is an old story, as every student, past or present, will wryly proclaim. In fact, those who have been through the rigors of the Institute's curriculum form a bragging brotherhood who recall, with inward satisfaction and feigned outward pain, their pride in the experience. From the beginning, the Institute stressed scholarship and set exactingly high standards, rejecting the intellectual slackness then so frequently indigenous to the collegiate way of life. It anticipated by nearly a century the present drive for higher intellectual standards.

A second strand giving special character to the fabric of M.I.T. has been its assumption that its students have a commitment to adult values and that they are capable of a large measure of self-government and freedom as they prepare themselves for the professional estate. This was not the customary attitude of colleges toward

their students when M.I.T. was founded. It was one of a very few institutions that emphasized the importance of student maturity, that sought to avoid spoon-feeding, and that did not draw back from being Spartan. In fact, the president of a distinguished American liberal arts college made the observation, in the first half of the last century, that "the very cultivation of the mind has frequently a tendency to impair the moral sensibilities, to induce that pride of conscious ability and variety of attainments which . . . are affectations . . . offensive to God." This kind of anti-intellectualism never infected M.I.T.

In this respect it was the late Professor William T. Sedgwick who first noted the aptness of Matthew Arnold's lines:

> . . . rigorous teachers seized my youth
> and purged its faith and trimmed its fire.
> Showed me the high white star of truth,
> There bade me gaze and there aspire.

This attitude of M.I.T. toward its students has contributed, I am sure, to a high sense of responsibility and self-reliance important to them in later life.

A third strand has been the adaptability of the Institute. From the very beginning it has been marked by a readiness to innovate and to change, particularly in response to changing needs in our society. It has always considered its responsibility to extend beyond being merely a conservator of learning. Conditioned by the dynamism of science, it has perforce avoided any sense of finality or completeness. In consequence, it has had a sustained urge to experiment, to advance, accumulate and grow, to pace and not to follow the changing needs and conditions of our society. "Creative instability" is the way one of our professors is reported to have characterized the Institute's readiness to respond to the impact of its own creativity and a current observer, David Boroff, accurately notes that the M.I.T. academic and research program today "provides a map of recent intellectual and social history."

The institution itself was a mutation in education, and from this start there has been a tropism toward educational experiment and teaching improvements, a tropism now expressed in the modernization of its engineering curriculum, the new center for advanced engineering study, changes in the undergraduate curriculum, and the revolutionary effort to improve the teaching of science in the pre-college schools.

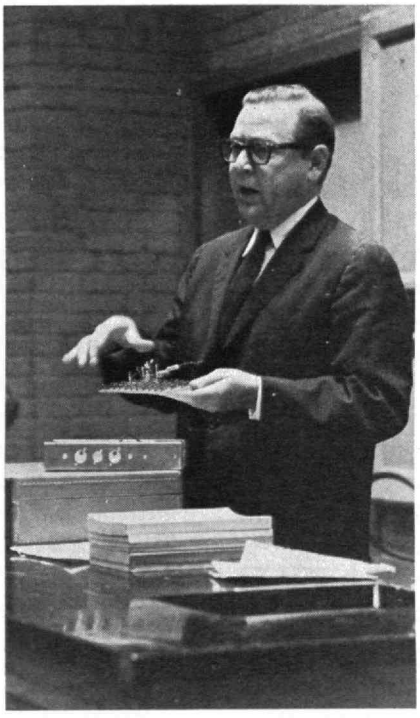
A fourth strand and one giving special splendor to the fabric of our institution has been the Institute's polarization around science. It was the growth of science and technology in the past century, of course, that made much of the then traditional college curriculum obsolete. It was the spirit and method of science, the scientific habit of thought, that found expression in the Institute and gave education a new look. As President Pritchett once said, "This education faced life and its processes clearly, it stood foursquare to the universe, ready to accept truth wherever found and tied to no demon and to no tradition. The technology of Rogers means something to the whole world because it related itself to actual needs in material things, and because it stood for intellectual sincerity in the things of the mind and of the spirit. It not only did not fear the truth, but it believed wholeheartedly that the truth shall make us free." And so it does today.

In the face of the practical responsibilities which rest today on science for our security and our material welfare, it is all too easy for people to become bemused by the sophistry that science is inimical to the spiritual ends of life. It has been one of M.I.T.'s obligations to show that science instead is one of man's most powerful and noble means for searching out the truth and for augmenting man's dignity by augmenting his understanding. The scientific spirit enables man to increase his knowledge and understanding and still stand humbled and ennobled before the wonder and majesty of what he does not yet understand.

The fifth and golden strand has been a deep devotion to the wholeness of learning. While M.I.T. was an innovation that filled a gaping hole in the fabric of our system of higher education, it was not founded in protest against the other more traditional institutions of the day, particularly the institutions with a commitment to classical curricula. Rogers wanted the new institution to add something new and differently useful and not to denigrate the old. This is of particular significance because it has resulted in M.I.T.'s respecting the liberal arts as well as science and in fortifying the belief that both are essential to modern man. What Rogers said nearly a century ago sounds today like a reply to Sir Charles Snow. "The recent discussions here and elsewhere," he said, "on the relative value of scientific and classical culture seem to threaten an antagonism which has no proper foundation in experience or philosophy." While the humanities or general studies languished at times as M.I.T. grew, nevertheless the institution from the very beginning has been cordial to every truly liberal study. With considerable success it has avoided the cleavage between the two cultures of which we have recently been hearing so much. Out of this devotion to the unity of knowledge has come the prosperity of the humanities and social sciences at M.I.T. today. Here they and the physical sciences seem to have achieved a true symbiotic relationship.

The sixth strand has been an accent on usefulness and on relating education to the current needs of our society. As has been said so many times, the Institute has consistently emphasized the value and dignity of practical education. It has enthusiastically embraced a philosophy of education that has been described by J. B. Conant as "one hostile to the supremacy of a few traditional vocations, a philosophy moving toward the social utility of all useful labor." In seeking this goal of social utility the Institute has avoided class distinctions. It has recognized that institutions of higher learning, if they are to serve our society well, should be open competitively to all students of requisite intellectual competence and sound character regardless of

PRESIDENT ROBERT H. WINTERS, '33, presided at the Third Alumni Fund Conference where Dr. Killian gave the address reported here. From left are George W. Knight, '24, conference chairman; D. Reid Weedon, Jr., '41, Alumni Fund Board chairman; Dr. Killian; Mr. Winters, and Gregory Smith, '30, Fund Board member.



"WE HAVE a great tradition of putting education and things of the mind first," said Dr. Killian. From left above are Professors Erik L. Mollo-Christensen, '48, Richard B. Adler, '43, and John Wulff, lecturing to Fund workers in September on, respectively, how aeronautical engineering students learn about waves, how future electrical engineers study transistors, and what makes metallurgical research exciting to today's students.

class, creed, or color. Admission should be based on pure merit. It has wholly rejected the attitude, which at one time was to be found in many educational institutions, that higher education is not needed and should not be provided, as one college president snobbishly said, "for people who planned to engage in mercantile, mechanical or agricultural operations." Acceptance of the importance of a classless society and of encouraging merit from all walks of life placed the Institute squarely in the freedom march of history to reject caste and privilege, to recognize the importance of social mobility, and to give all of our citizens an opportunity to obtain an education commensurate with their highest potential.

This has been profoundly important in shaping the cosmopolitan character of the Institute's student body and in providing our society a steady stream of talent, from many backgrounds, trained to a wide variety of useful occupations.

These attitudes that have shaped M.I.T. in the past and give it shapeliness today—its emphasis on intellectual accomplishment and professional objectives; its preoccupation with the "discovery of the future"; its determination to be, as Walker said, "a place not for boys to play but for men to work," and thus to expect a commitment to maturity on the part of its students; and its devotion to social fluidity—have marked the Institute as a truly indigenous American college and placed it in the mainstream of our democratic process.

Some of the ideas embodied in pioneering American educational institutions such as M.I.T. in part had their origin in Jefferson's novel concepts for the University of Virginia and in his boldness in discarding obsolete educational ideas and methods. Rogers left William and Mary College and went to the University of Virginia to teach about 10 years after Virginia opened, and he certainly was acquainted with Jefferson's educational objectives and innovations, even though they were not to be adhered to in later years by the University. "Particularly in the South and West but also at Cornell and at M.I.T. the Jeffersonian scheme was recognized . . ." notes Frederick Rudolf in his recent history, *The American College and University*. It is worthy, too, of a footnote that the Bosworth plan for the new M.I.T. buildings in Cambridge was inspired in part by the interconnected buildings which Jefferson designed for the University of Virginia. Being largely under one roof has facilitated intercommunication within M.I.T.

I would identify three other strands in the fabric of our values. The first is the strong tradition of public service which has been so amply demonstrated since 1930—a tradition that a great institute of technology and its people have a responsibility to serve their community, their state, and the nation. Karl Compton's presidency saw this spirit of public service spectacularly realized by the Institute, but the spirit has been a hallmark of the institution since the beginning. Rogers, of course, was a distinguished public servant, and so were Walker and Maclaurin.

The second of these last three strands is the invigorating, challenging climate of the Institute, a subtle intellectual and spiritual tension that tends to draw out the best in a man, to raise his sights, to inspire a performance beyond his and others' expectations. This quality of challenging men to outdo themselves is one of M.I.T.'s most important trade secrets. It involves all the subtle and imponderable factors which enable a group of scholars, both student and faculty, to make a great university where otherwise a similar group might constitute a mediocre one.

The last strand I would identify is the exceptionally mature and constructive relationship between the Institute and its Alumni—a relation that derives, I believe, from the other qualities that I have described.

We do not have, nor do we need, the academic side shows that are sometimes employed to entertain college alumni. Instead we have a great tradition of putting education and things of the mind first, a tradition that wins for the institution a brusquely quiet loyalty and affection, usually unspoken, and makes it the radiating center of a globular nexus of fellowship. Out of this sense of values and priorities, this special sense of relatedness, comes an M.I.T. alumni style—a reticent, sometimes austere, but uniquely authentic devotion that gives our corporate life a fine integrity and exceptional strength.

The interweaving of these strands has given M.I.T. its special coloration and unique design. These qualities could not have been maintained had not M.I.T. developed as an independent institution. They also have provided a spiritual strength undergirding its determination to be independent and free to be different during times when the going was rough and merger with Harvard was several times proposed.

But there is something more. M.I.T. is a blend of the enthusiasms and aspirations and eager questioning of gifted youth, of the skills, the learning, and the wisdom of those who "gladly teach"; and of the professional mastery, the constructive and entrepreneurial energies, and the responsible, influential citizenship of those who have won its degrees. Having worked here over 30 years I know that it is a place where thought is honored and men may dream, a place where the mind runs free and the spirit may aspire, and where learning is enriched by "laughter and the love of friends." It is a place where the highest aims and aspirations of our society, and of each of us as individuals, find encouragement and understanding and sometimes realization. It is a place where whatsoever things are just, whatsoever things are lovely, whatsoever things are of good report are admired and sought—and sometimes found, but always sought. It is a place where things of the mind run in happy concert with things of the heart and spirit. It is a society of scholars, students, faculty, alumni, who know that the honor of a university must rest upon its contributions to mankind. These are some of the qualities and the consecrating influence of this institution which bring us together.

Trend Of Affairs

Professor Harlow Shapley (left) and Edward H. Davis, '01, amid others—at top of page—at the M.I.T. Alumni Seminar.

A Pattern for Learning After Being Graduated

FOR THREE DAYS in September, Alumni and their wives filled the Kresge Little Theater to study patterns of matter as they are affected by energy. This first Alumni Seminar, said President Julius A. Stratton, '23, was "one of the most significant experiments that M.I.T. has ever undertaken," and when it ended many of the 200 participants felt that it, too, had set a pattern—in education—that would be well worth following again.

The program, Professor Roy Lamson pointed out, had the structure of a three-act drama. The first day was devoted to the origins of matter, the next to the origins of life, and the third to the shaping of modern society. Only M.I.T., several wives added, would attempt to cover so much so fast.

Professor Harlow Shapley, a Life Member of the M.I.T. Corporation, took the stage first, to trace the expansion of man's concept of the firmament, to show how Einstein first presented his famous equation, and thus to provide a background millions of light-years broad for the lectures that followed.

Professor William S. Von Arx, '55, next described the "seven seas" as a single system centered in the Antarctic with branches curling outward like the petals of a flower. How old is the ocean, he asked; where did the water come from, and how did it become salty? Oceanography's answers to those questions led naturally to a similar account of the material in the rest of the planet on which the ocean is but a film. This was given by Professor Patrick M. Hurley, '40, who stressed the importance of meteoritics in current research, and reviewed studies of the evolution of continents (which he describes on page 28 of this issue of The Review).

With a world thus accounted for, Professor Irwin W. Sizer read from Genesis the next morning to open the discussion of life's origin, its needs, and its varieties. Professor Sizer led everyone well into the passageways of the living cell, and there Professor John M. Buchanan pointed out details of biological molecules and the code in which genetic patterns are stored. Professor Patrick D. Wall's topic, finally, was announced as characteristics that distinguish man from other animals, and he surprised everyone by reviewing some military history, showing a documentary film about the lives of penguins, and talking about octopi and bats. To such specialists in adapting themselves to their environments as those creatures, Professor Wall suggested, a man may seem to be a Jack-of-all-trades who is master of none.

Materials have limited what we can do, Professor Cyril S. Smith, '26, noted the next day, when attention was focused on the shaping of society. Taste and aesthetics have affected our choices of materials, and empirical work has yielded much of our knowledge of them, but theoretical studies are becoming increasingly important. Energy was the next topic, and Professor Warren K. Lewis, '05, recalled both high lights and anecdotes from the history of advances in the use of energy. Then Vannevar Bush, '16, brought that session to a climax with an address on "Man's Use of Men" (which you will find printed in full in The Review next month).

But this was not all: Chairman James R. Killian, Jr., '26, of the M.I.T. Corporation, and Professors Norbert Wiener, Elting E. Morison, and Carroll L. Wilson, '32, joined the third day's speakers to consider unfinished business and field questions from the audience. They were quickly embroiled, of course, in discussions of such worries as:

► The effects on universities of the increasing volume of data and knowledge;

► How machines will affect men's lives ("If the machine kills man," said Professor Wiener, "it will not be murder by the machine. It will be suicide.");
► The responsibilities to society of creators of new things, and finally
► The wisdom of the current rate of expenditure on efforts to land a man on the moon.

At dinner every night there was much reviewing of lessons. Professor William H. Dennen, '42, Henry G. Houghton, '27, Roy Lamson, and others joined the lecturers, Alumni, and ladies in these talkfests. And at the final dinner, after a reception at President Stratton's home, Dean George R. Harrison tightened the whole bundle of knowledge in everyone's memories by retracing the patterns described and emphasizing the roles of protons, neutrons, and electrons in the behavior of everything from galaxies to penguins.

Recalling the amazing adaptation of Professor Wall's friends, the penguins, to their environment, Dean Harrison suggested that an even better measure of intelligence may be how well a creature adapts its environment to its needs. Men have done this better than their fellow creatures, he believes, and probably know more now about penguins than the penguins know about men. If, he concluded, humanists, scientists, and engineers will but walk together and work together, mutually stimulating each other, men can move "on and on to ever more interesting and creative patterns."

The seminar brought members of classes from 1901 to 1960 back to the Institute, from near and far, and the questions they popped as the hours flew left no doubt that it was, in President Stratton's words, "clearly a kind of thing that universities must undertake."

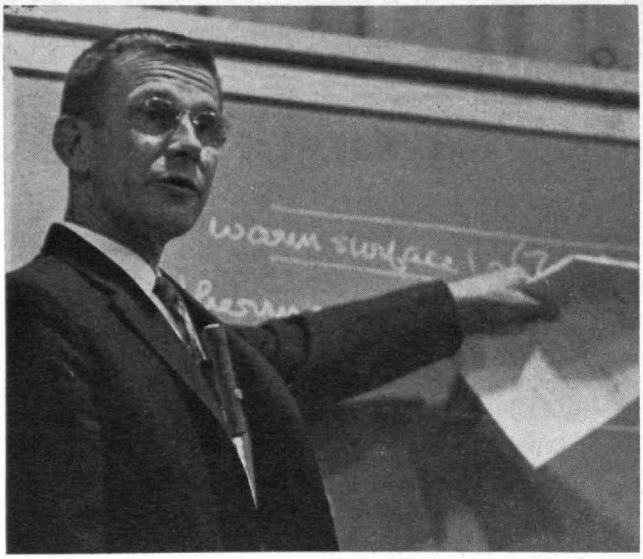
The Class of '67

MID-SEPTEMBER brought 909 freshmen to M.I.T. from every state except Vermont and Nevada and from 22 foreign countries. Public schools sent 725, private schools 129, and foreign schools 55. Eighty-seven per cent were from the top tenth of their classes; nearly a third of them entered the Institute with degree credit for work already done, and hence could register for electives or advanced work rather than some of the required subjects.

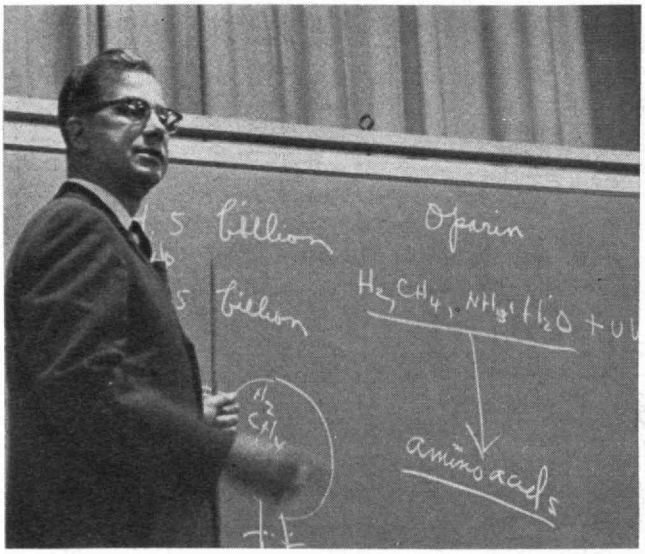
Thirty-eight members of the class were sons of M.I.T. Alumni. Thirty-six were girls, four of whom were daughters of Alumni. The young ladies became the first freshmen to reside in McCormick Hall, and one of them promptly pointed out that since girls from Wellesley and other schools were being invited to one of the first social gatherings of the class, it would be appropriate to invite some Harvard men, too.

The 44 freshmen from outside the United States brought the total number of foreign students to more than 800, and gave M.I.T. a percentage of foreign students not likely to be exceeded this year by any United States educational institution except Howard University in Washington.

Ronald L. Gilman, '64, headed a student committee which joined President Julius A. Stratton, '23, Dean Kenneth R. Wadleigh, '43, and others in welcoming the new class. Professors Warren K. Lewis, '05, Hans-Lukas Teuber, and Harold E. Edgerton, '27, addressed them, and they were taken on tours of the Institute's many laboratories.



Professor Von Arx describing the temperature of the seas (only the surface is warm) at the first Alumni Seminar.



Professor Buchanan explaining the requirements for life.

Professor Sizer pointing out the varieties of life found.

A New Heart-Lung Machine

THE M.I.T. Cryogenic Engineering Laboratory has developed a new kind of heart-lung machine, or pump-oxygenator, that is simple, inexpensive, and easy to operate. It has not been tested on human patients yet, but laboratory tests indicate that it may be a means of greatly extending the availability of such machines.

This one weighs only 50 pounds and takes up only 1.5 cubic feet of space. It is highly reliable, can be sterilized in the assembled condition and therefore ready for instant use, and can be adjusted quickly to serve either an adult or an infant. Its compactness may permit its use on ships and in field hospitals, and its low cost may enable many more hospitals to afford such machines than have them now.

This one is driven by oxygen and requires no electricity. Blood flows by gravity into a rotating cylinder to be oxygenated and is then pumped back to the patient. The cylinder contains a film made of fish netting and tulle on which the blood is caught for exposure to the oxygen, and this is replaced after each use.

A significant advantage of the machine is that it requires less blood for priming than current machines. An intern's affection for a dog providing blood for laboratory work led him to suggest that the machine could be charged with a sterile saline solution, and this suggestion both spared the animal and indicated that demands on human blood donors might be lightened.

While studying the heart-lung problem, the researchers also developed a small infusion pump with which one drop of a chemical at a time can be placed in an artery. This pump already is being produced and used in therapy of certain parts of the body.

Professor Samuel C. Collins of the Department of Mechanical Engineering and Dr. Ernest M. Barsamian, a surgeon on the staff of the Division of Sponsored Research, directed the project, which has been under way for several years; and the Office of Naval Research, the National Institutes of Health, and the Massachusetts Heart Association helped the Cryogenic Engineering Laboratory finance the work.

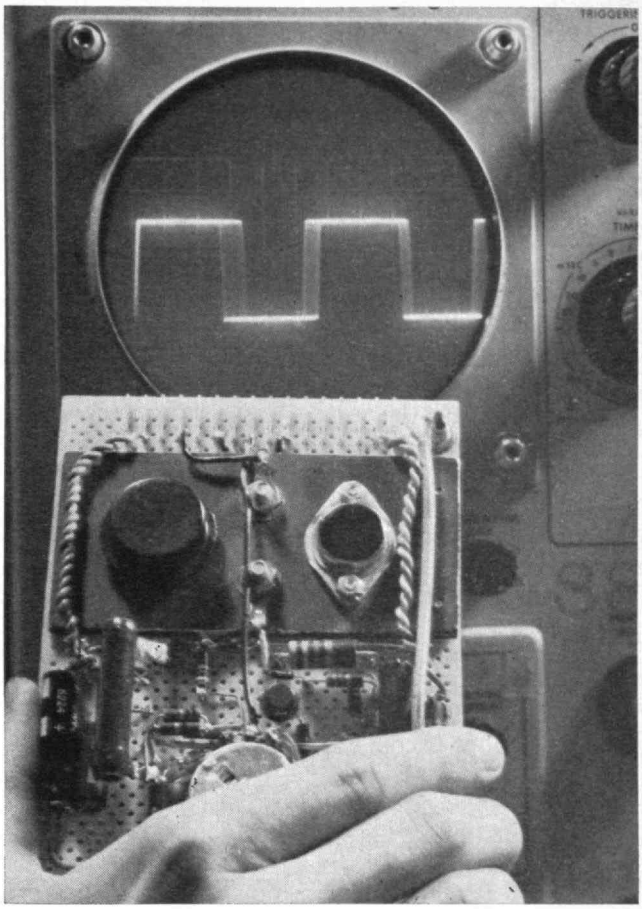
A New Enzyme Resource

THE NATION'S first Enzyme Center was established this year at the Tufts University School of Medicine with Stanley E. Charm, '52, as its technical director. Its purpose is to increase the availability of enzymes for basic research at universities, hospitals, and other laboratories throughout New England. Professor Irwin W. Sizer of M.I.T. is one of six scientists serving on its Advisory Committee, and Dr. Charm is a lecturer in nutrition and food science at M.I.T.

Enzymes are "the biochemical middlemen," or protein catalysts, of the body's chemistry, which regulate the conversion of all substances required for life and function. More than 700 enzymes have been isolated, but none has yet been synthesized in a laboratory, and only a few are produced commercially. The U.S. Public Health Service has provided for the first 18 months' operation of the new Enzyme Resource. Further study of enzymes, it is hoped, will help in preventing and curing diseases, producing anti-viral and anti-bacterial vaccines, and possibly even lead to ways of manufacturing vital chemicals of the human body in the test tube rather than the liver or other organs of the body.

An Advance in Electronics

THE Research Laboratory of Electronics at M.I.T. has reported the development of a pocket-size hi-fi amplifier or transformer that achieves performance comparable to that of full-size devices. Its inventor, Amar G. Bose, '51, Associate Professor of Electrical Engineering, says its simple transistor circuit handles an incoming signal in an entirely different way than conventional equipment, and makes very high efficiency, little heat, and light weight possible.



Fundamental to its operation is the conversion of an undulating input signal (of varying amplitude and frequency) to a rectangular output signal, made of rectangles of fixed height and varying width. The output signal is a voltage which switches back and forth between two fixed values, depending on variations in the input signal. For large positive values of the input signal, the output's upper voltage is on longer; for large negative values, the output's lower voltage is on longer.

When displayed on an oscilloscope, the output wave appears as a train of rectangles whose vertical edges oscillate rapidly back and forth. The upper voltage forms the "top" of each rectangle, the lower voltage forms the "connection" between the rectangles at the base. The distance through which the vertical edges move corresponds to the voltage (or magnitude) of the input signal, and the rate at which they vibrate through this distance corresponds to the frequency of the input signal. (The amplifier and display are shown above.)

When the rectangular wave is fed directly into a loudspeaker, the original signal or sound is reproduced with very high fidelity. The system is also applicable with minor modifications to numerous other uses.

Synthetic Food Prototypes

AT TIMES, synthetic foods like synthetic materials may be superior to those produced by nature. They might, for example, meet the nutritional needs of a spaceman (weightless, confined, and under stress) better than concentrated familiar foods; and they also might help solve the unusual dietary problems of some earth-bound folk.

Much of our food is used to meet the body's energy requirements. Proteins and carbohydrates give us about four calories per gram. Fats yield nine calories per gram, but there's enough of Jack Sprat in most of us to limit our intake of fats. Synthetics, it now appears, may contain from six to nine calories per gram without the harmful effects of a diet consisting too largely of fats.

Two prototypes of such synthetics are being studied in the M.I.T. Department of Nutrition and Food Science, and rats are thriving on them. These nutrients are fed to the animals in an agar gel which resembles cheese and that can be given almost any flavor. Years of additional research and toxicity testing, however, must precede human consumption of such synthetic high-energy metabolites.

One of the prototypes being tested on the rats is 1,3-butanediol, a petroleum derivative, first studied as a food substitute in Germany during World War II. It is both plentiful and cheap, and contains six calories per gram.

The other prototype, 2,4-dimethylheptanoic acid (DMHA, for short), was designed and synthesized at M.I.T. It is not found in nature, and is still expensive to produce, but it contains from eight to nine calories per gram.

Food technologists heretofore have concerned themselves mainly with the processing of natural foods, rather than biochemical research such as led to the creation of DMHA. It was produced by a group that included Assistant Professor Sanford A. Miller; Henry A. Dymsza, research associate; and Steven R. Tannenbaum, '58, instructor, under the direction of Associate Professor Emily L. Wick, '51.

Their work was supported by the Air Force, which is interested in survival rations as well as menus for moon colonists, and by the National Institutes of Health, which considers synthetics a possible aid in the study of energy metabolism and its regulation within the human body.

Undergraduate Scholarships

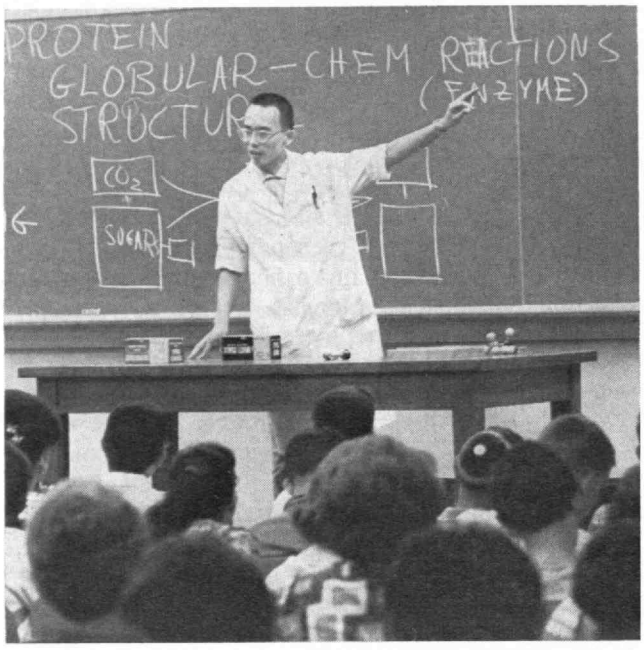
GRANTS to M.I.T. this year included a five-year, $50,000 fund from the Anaconda Company to meet the needs of two undergraduates each year and at the same time provide unrestricted funds for the Institute's overall teaching and research programs.

C. E. Weed, chairman of the Board of the Anaconda Company, said the grant was made to support students in the earth sciences and in materials science and engineering, as part of an effort to meet the needs in those fields. Chairman James R. Killian, Jr., '26, of the M.I.T. Corporation, hailed the grant as an example of a far-sighted approach in that it both strengthens the student aid resources available and provides funds to meet expenses incurred by the Institute.

Last Summer at M.I.T.

MORE THAN 1800 regular students attended M.I.T. classes last summer, more than 1500 other persons took special short courses, and more than 900 high school students reported for free evening courses.

The regular summer term's enrollment of 481 undergraduates and 1325 graduate students was mainly in engineering, 63 per cent; and in science, 25 per cent.



David P. Fan, G, lecturing to high school class at M.I.T.

The special summer programs for professional men and women, most of which ran one or two weeks, drew 60 per cent of their students from industry, 30 per cent from government, and 10 per cent from education. The average age of these advanced students was 35.

The high school students paid no fees and received no credit, but came evenings for from eight to 10 weeks, to learn about science, mathematics, economics, and technology from a volunteer faculty that included 38 M.I.T. students.

Construction work, including pile drivers in the former main parking lot where the new Materials Center will rise, added to the summer's daytime din.

The Civil Engineers' STRESS

A NEW computer language and programming system for solving problems in the engineering of structures has been developed at M.I.T., and will be used this academic year by both graduate and undergraduate students. Called STRESS (for STRuctural Engineering System Solver), it enables a civil engineer to communicate with digital computers in the language of the engineer, describing each structure as an original and unique problem. It can be used to analyze and design buildings, bridges, radar antennas, aircraft, space vehicles, and many other structures; and gives the engineer great freedom and flexibility in expressing his ideas.

STRESS was developed by a research team led by Visiting Associate Professor Steven J. Fenves which included Assistant Professors Robert D. Logcher, '58, and Samuel P. Mauch of the Civil Engineering Department.

(The Trend of Affairs is continued on page 54)

Alumni Fund's Goal: $1,000,000

It is the keystone of support for M.I.T. and is used to meet the needs of future students

BY HENRY B. KANE, '24

George W. Knight, '24, and Mr. Kane at a Fund conference.

WITH the announcement of a million dollar goal for the 1964 Fund, the Alumni Fund Board has made one of the most important decisions since our annual giving program was established in 1940. In so doing they have recognized the increasing needs of M.I.T., the abundant evidence of alumni willingness to help meet those needs, and the conviction that, after almost a quarter of a century, the Alumni Fund has come of age. They have further shown their realization that it has become, in the words of Dr. Killian, "the keystone of the Institute's structure of support."

All Alumni are familiar with the organization and operation of the Fund in general, but many do not know the particulars. To give our bold, new goal its proper perspective it will be helpful to enumerate some of these.

Two features particularly distinguish the M.I.T. Alumni Fund from the majority of other college funds in this country. First, it is a capital fund, and is not used to defray the Institute's annual operating expenses; and second, it concentrates its financial assistance in the general areas of student aid and environment. These are such important principles that they warrant further detail.

The Multiplication Factor

Since the earliest days, Alumni have been major supporters of their colleges. Through their benefactions have come buildings and endowments, and their demonstrated faith has always been a major influence in attracting the attention and support of non-alumni friends. Nevertheless, most colleges generally operate

President Stratton addressed Fund workers at start of 1964 effort. Chairman D. Reid Weedon, Jr., '41, is seated on steps.

at a deficit. Perhaps this deficit was what inspired Yale to institute the first program of annual giving in 1890. Certainly it has been a prime incentive for those that followed. Today most gifts to annual college funds are made without restriction and are used to meet deficits. In some cases they are even included in the operating budget. Not so for the M.I.T. Alumni Fund.

Each year the Fund Board meets with representatives of the Institute's Administration to determine its most pressing capital needs. It then formally votes to allocate available resources to those which are consistent with Fund objectives. Thus, we may truly call it "a capital Fund based on annual giving."

In this framework, however, there is an important corollary that bears out the statement that the Fund has a large multiplication factor. This occurs in two ways:

► From time to time gifts are offered to colleges contingent on demonstrated alumni support. Many colleges are now engaged in raising large sums to meet the challenge of such offers from foundations. Mr. Eastman's magnificent contribution that made M.I.T. in Cambridge a reality was conditional on alumni giving. The opportunity came to the Alumni Fund in 1957 when Alfred P. Sloan, Jr., '95, offered to double the giving of other Alumni to the Compton Laboratories.

The importance of evidenced alumni interest also is shown by the increasing number of business concerns which have instituted regular matching gift programs. More than 200 companies have now adopted this method of supporting higher education. One of the most recent has offered to match two for one if alumni participation exceeds 50 per cent. There is no question that alumni support is important in attracting contributions from others.

► A second and even more important factor is what may be called "leverage," the ability of undesignated gifts through the Fund to have an effect far beyond their sum total. There are always Institute projects and needs to which Alumni and friends respond generously. On occasion, however, major gifts do not provide sufficient financing to complete a project according to its original plan. Perhaps a dining room would have to be deleted from a dormitory, a music room from a library, or possibly construction would have to be delayed until additional financing could be obtained. It is in such cases that the Alumni Fund, to the extent of its available resources, can step in. Baker House, Burton House, and the Hayden Library are cases in point. Although not exactly the same, the Board's latest allocation of funds for the main dining room in the new Student Center, now being built, is very similar. It will be a memorial to the late Harold E. Lobdell, '17, who was long a major force in student and alumni affairs.

These characteristics of our Alumni Fund help to make it a particularly important source of support to M.I.T. and multiply the effectiveness of the sum raised.

As previously mentioned, the Alumni Fund is raised primarily for "unrestricted" purposes. In one sense, however, there has been a restriction by policy of the Fund Board, its practice of allocating money principally in the areas of student aid and environment. These are the areas of most widespread interest and concern to the Institute's former students, now its Alumni The Compton Laboratories were an exception to this policy.

Eleven Fund Workers Are Cited For Notable Work in 1963

PRESIDENT Robert H. Winters, '33, presented 11 citations for notable accomplishment in the 1963 Alumni Fund effort at the September conference of Fund workers. Three went to Reunion Gift Chairmen whose classes announced outstanding gifts: *William R. Mattson, '13, Robert L. Johnson, '38,* and *David W. Skinner, '23.* Others went to Class Agents whose classes had the greatest participation in their age groups: *Arthur L. Shaw, '09, Charles E. Worthen* and *Rudolf S. Slayter, '28,* and *William J. McKay* and *David P. Flood, '45.* And three more went to Regional Chairmen whose regions achieved top participation in their size groups: *Abbott L. Johnson, '22,* of Muncie, Ind.; *Harry B. Duane, 3d, '57,* of Worcester, Mass.; and *Evan A. Edwards, '37,* of Rochester, N.Y.

The conference brought scores of Fund workers to M.I.T. to hear Doctors Killian and Stratton and Dean Gordon S. Brown, '31, discuss the Institute's past, present, and future. Other participants in the two-day program included: Fund Chairman D. Reid Weedon, Jr., '41; F. Leroy Foster, '25; Gregory Smith, '30; Carl M. Mueller, '41; Donald P. Severance, '38; Douglas F. G. Haven, '52; Kenneth S. Brock, '48; and many members of the Faculty.

C. E. Smith, '00, and Mr. Winters in the Kresge lobby.

The Board felt that Alumni generally would wish to take part in a fitting memorial to Karl Taylor Compton, whose concern for student welfare was so manifest. The laboratories which now bear his name, and in the planning of which he played a leading part, stand today as that memorial, financed importantly by the Alumni Fund. Mr. Sloan's matching gift made this exception doubly meaningful. It was further testimony to the wisdom of having a fund that follows certain general policies, yet is sufficiently flexible to respond to unique opportunities.

For a good many years M.I.T. had a particular scholarship "problem." There was an insufficient number of open scholarships available, open in the sense that they were not restricted by geographic area or other characteristics. Some years ago the Fund made Alumni Fund National Scholarships available to help answer this need. They are awarded by the Director of Student Aid with no restrictions other than scholastic attainment and demonstrated need. In the last seven years these scholarships have helped 153 students to obtain an M.I.T. education.

How It Is Organized

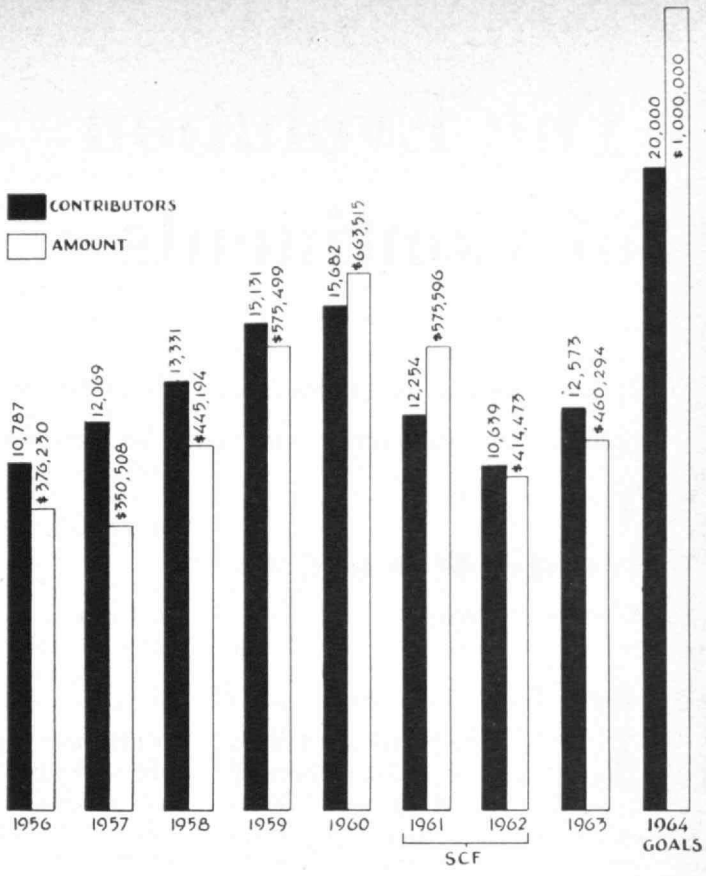
These, then, are the philosophies and the good works of the Fund. Let me now describe, briefly, how the Fund is organized. Fundamentally, its success rests on the efforts of some 2,000 volunteer workers. They operate in four general areas: Class Agents, each of whom personalizes the Fund to his class by mail; Special Gifts Solicitors, who personally contact those Alumni in a position to make substantial gifts; Regional Solicitors, whose prime concern is to increase participation and who cut across class lines; and Reunion Gift Committees which focus particularly on 25-, 40-, and 50-year class gifts.

Basic to the Fund program are the class efforts: mail solicitation, personal contacts, and other activities which center on the Class Agent and Reunion Gift organizations. In fact, the entire Fund is class-oriented, with the other activities planned to supplement rather than conflict. The annual program is so planned that the work of its various groups is integrated into an effective whole. Every contribution, regardless of how it is obtained, is credited to the donor's class, and at the same time to his region, if he is in one organized for personal solicitation.

Co-ordinating the Fund and establishing its policies is the Alumni Fund Board composed of six members elected by the Alumni Council of the Alumni Association and nine ex-officio members. The Board, in turn, appoints the Fund staff in Cambridge.

How the Job Can Be Done

Now, for 1964, these philosophies and organizations will be focused on the realization of a $1,000,000 goal. In that context, a few statistics may be enlightening. There are more than 51,000 living Alumni for whom we have current addresses. Of this number 28,000 (55 per cent) have, at one time or another, given to the Fund. If only three out of four of these prior contributors will again give this year, and if their gifts average $48 (the figure was $47 in 1959), we will achieve our goal. Hopefully, all 28,000 will respond in this year of challenge, and their numbers will be increased by some who have not, heretofore, taken part.



During the period of the recent capital campaign the Alumni Fund confined its efforts to mail solicitation. As expected, the results were less than in previous years, but even during this two-year period when Alumni were making major gifts to the Second Century Fund, they gave almost a million dollars to the Alumni Fund. In 1960, the last year of a complete Fund effort, 15,700 Alumni gave $664,000. Our current goal, then, is 50 per cent higher than our previous high.

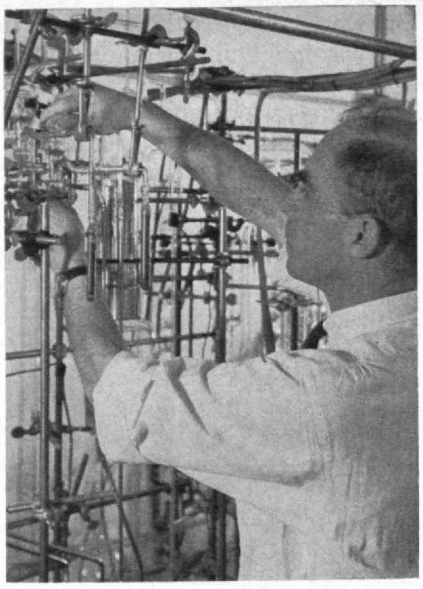
It is tempting to play with simple arithmetic to show how readily our goal is attainable. It will be evident to every Alumnus, however, that such an exercise is not of great significance. Our goal will be achieved only through the devoted and effective efforts of a great many volunteer workers and the thoughtful giving of every one of us. With this I am confident we shall reach our objective which is, in the words of Dr. Killian again, "commensurate with the status which the Institute has achieved as one of a very small number of leadership universities which stand at the very pinnacle of American higher education."

It is obvious that the varied needs of such a diversified institution as M.I.T. require a number of vehicles of support. The Alumni Fund is only one of these but it is, in truth, the keystone. It is now, as it has been since the beginning, the responsibility of M.I.T. Alumni. It was conceived by us, directed by us, and nurtured through the years by the continuing efforts and generosity of many thousands of us. This year each of us has the opportunity to demonstrate convincingly his belief in the future of an even greater M.I.T., his recognition of the part it has played in his own life; and his willingness to help students of the future as he was helped by those who preceded him. It is a challenge to every one of us, individually and collectively.

The Evolution of Continents

Isotopes reveal that materials in the earth's crust have been coming from its interior since early in our planet's history

BY PATRICK M. HURLEY, '40
Professor of Geology



The author in his laboratory.

ABOUT A DOZEN years ago Professor Louis B. Slichter, formerly of M.I.T., brought a group of chemists, geophysicists, and geologists together at Rancho Santa Fe in California to discuss the evolution of the earth. It was generally agreed at this highly successful meeting that the older ideas of an initially molten earth should be abandoned in favor of low temperatures of accretion, and later radial chemical segregations resulting from radioactive heating. This focused attention on the origin of continents, at which point it became clear that opinion was divided into major opposing hypotheses:

► Some favored convective overturn of large or small thicknesses of the mantle as a mechanism for converting the earth's radioactively generated heat into the mechanical work of mountain building. This was in contrast to older ideas related to a cooling and shrinking earth.

► Others favored the idea of self-propagation of continents. The chief mechanism for the generation of sialic crust, in their view, was the vertical separation of crustal components by gravity and crystallization differentiation in regions of upset heat balance.

Those attending the conference agreed that more data and study were needed to resolve these questions. They probably did not then realize, however, that a dozen years later these issues would split geological science so far apart that no secure geological history can be written now. Today's students of it face such questions as whether the ocean basins are ancient or date only from fairly recent times; whether the continental crust was formed early in earth history and merely re-worked locally, or is being generated from the interior faster today than ever before; and whether the equator and poles have exchanged places in the past.

The old idea of continental drift has received a new legion of supporters, led now by geophysicists and oceanographers. To explain the thinness of ocean sediments, and the mid-ocean ridges and rifts, some geologists are seriously proposing that landward crustal currents are sweeping volcanic and sedimentary materials into the continents, thus maintaining their elevations and rates of sedimentation which otherwise would have decreased to a standstill long ago. Despite their extreme radicalism, these ideas are not easy to refute on classical geological grounds.

At the Rancho Santa Fe Conference it became clear that one of the key questions is: Did the crustal materials evolve early, for the most part, or have they continued to rise from the mantle at the approximate times indicated by the dates of their last period of crystallization? The growth of radiogenic isotopes appeared to be the most promising lead to follow to end this uncertainty, and the isotope geology laboratory at M.I.T. was formed to study them. Professors Harold W. Fairbairn, William H. Pinson, '52, and the author, together with a number of graduate students in the Department of Geology and Geophysics, have concentrated largely for the last two years on the relationship between rubidium 87 and strontium 87 in crustal and planetary materials. This pair can be used to trace the history of geochemical differentiation.

Rubidium 87 decays radioactively to Sr^{87} with a half life of about 50 billion years. This is long compared to the age of the earth. Strontium 87, consequently, has continued to increase in abundance relative to the other isotopes of strontium at a rate dependent upon the amount of rubidium that has been associated with the strontium throughout its history in any local environment. The relative isotopic abundances of these two elements is shown in Figure 1, and one can see from this how the present ratio of Sr^{87} to Sr^{86} in any sample of strontium reflects the history of this strontium in its association with rubidium.

This has turned out to be of great significance in the study of the evolution of the earth into its present chemical complexity. We are concerned, therefore, with the two measured ratios, Sr^{87} to Sr^{86} and Rb^{87} to Sr^{86}, in geological materials and meteorites, and the way these two variables have changed relative to the primeval values when the solar system was formed. It is most fortunate that the parent element rubidium and the daughter element strontium travel separate paths in most of the chemical proc-

esses in geology, because this has given rise to large changes in the Sr^{87}/Sr^{86} ratio in most types of geological material.

The original ratio of Sr^{87}/Sr^{86} at the time of formation of the solar system was homogeneous as far as we can tell from the limited material available. Professor Pinson has been working on this question by studying the abundance of these isotopes in meteorites. Figure 2 gives a plot of his measurements on unseparated samples of stony meteorites that were picked up soon after they struck the earth, before they could be significantly contaminated with terrestrial rubidium or strontium. As can be seen, the quantity of Sr^{87} relative to Sr^{86} is greater in meteorites that contain greater relative amounts of the parent element, rubidium.

Within the limits of measurement error it appears that the meteorites are derived from a system in which:

► At some single time in the past all of the material of the system contained strontium with an Sr^{87}/Sr^{86} ratio equal to .698.

► At that time the system became differentiated into a variety of chemically different subsystems with different Rb/Sr ratios.

► This process of differentiation could not have taken very long to occur, because the subsystems must have remained chemically closed—otherwise they would not now fall on a single linear plot.

If the decay rate of Rb^{87} were known precisely, the measured slope of the line in Figure 2 would give us the time of the chemical differentiation process that produced the different kinds of meteorites. It has been difficult to measure the decay constant of Rb^{87} precisely because the low-energy end of the beta particle spectrum is not negligible and is not known precisely. Present acceptable values range from 1.39 to 1.47×10^{-11} per year. Using these two values as limits we find that the data in Figure 2 give values of 4.32 to 4.56 billion years for the age of the meteorites. This is in agreement with, and independently confirms, a similar age found by the study of lead isotopes. The extrapolation of the line to zero Rb gives the primordial value of Sr^{87}/Sr^{86}, namely .698 ± .001.

Using this value as a base we can examine the history of geochemical differentiation in the earth. The measurement of the initial Sr^{87}/Sr^{86} abundance in terrestrial rocks with low Rb/Sr ratios, of increasingly ancient age back to two billion years, yields a plot which would extrapolate to the primordial value of .698 at 4.5 billion years, within the limits of uncertainty of contamination and age measurement. At least the data are compatible with the assumption that the earth also started with an Sr^{87}/Sr^{86} ratio of .698, similar to that in the parent bodies of meteorites.

The rocks tested for this conclusion have been the magnesium-iron-rich lavas in volcanic vents and fissures that have come from a depth in the earth that appears to be below the layer of major chemical inhomogeneity known as the crust. They are typically the material of oceanic volcanic islands. In the ancient cases they are found in the continents as large masses of volcanic rock that have been suddenly released to the surface or near surface, as exemplified by the Bushveld, South Africa; Sudbury,

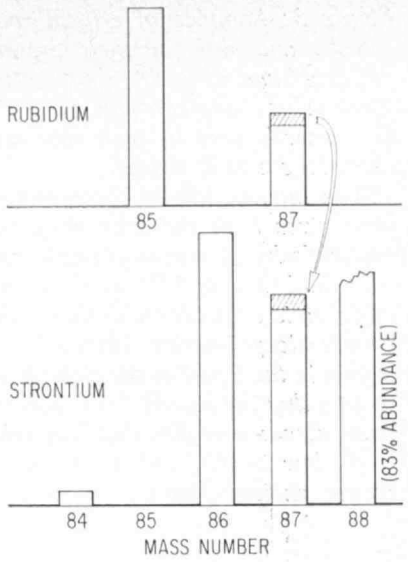


Figure 1: The approximate relative abundance of rubidium and strontium isotopes in nature is shown above. Radioactive breakdown of Rb^{87} causes an increase in the abundance of stable Sr^{87}. Hence, the ratio of Sr^{87} to Sr^{86} increases and reflects the history of the association of the strontium with rubidium.

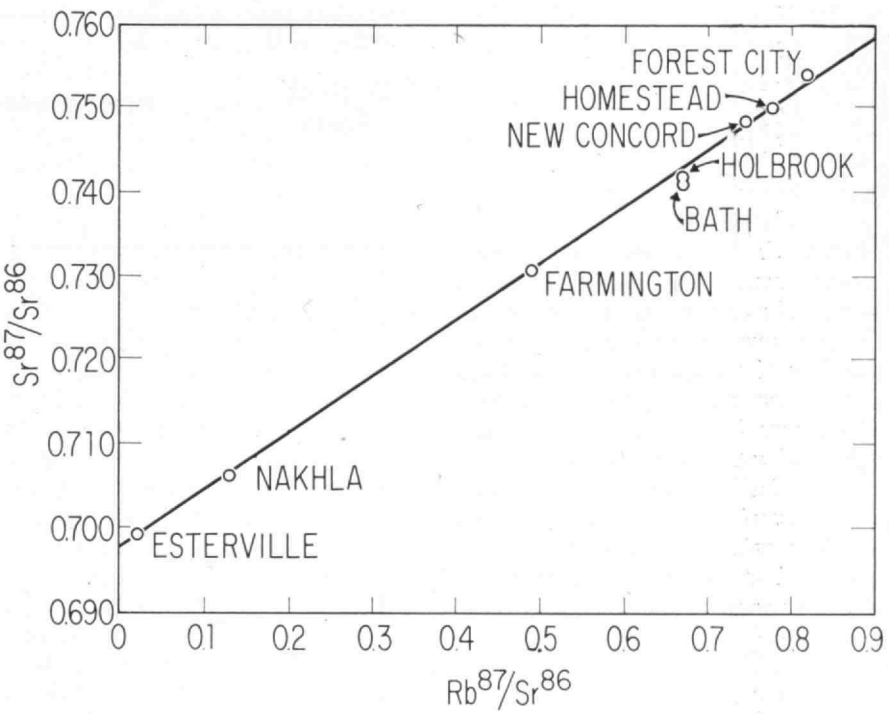


Figure 2: Professor Pinson's actual measurements of stony meteorites show they all started with a primordial ratio of Sr^{87}/Sr^{86} equal to 0.698. The time they all had the same ratio is given by the slope of the line as about 4.5 billion years ago. The primordial ratio of 0.698 is given by the zero intercept of this plot, which is known as an isochron plot.

Figure 3: Samples of crustal rock can be analyzed for their present Sr^{87}/Sr^{86} and Rb^{87}/Sr^{86} ratios. With these values, one can plot the Sr^{87}/Sr^{86} growth lines in each case and extend them back in time.

The intersection of these growth lines gives both the time since the materials had a common origin and the initial ratio of Sr^{87} to Sr^{86}. If this initial ratio coincides with that in the earth's deep interior (mantle), as shown in the figure at the right, it indicates that the material was derived from a source region that was relatively low in Rb, and not from remelted ancient crust.

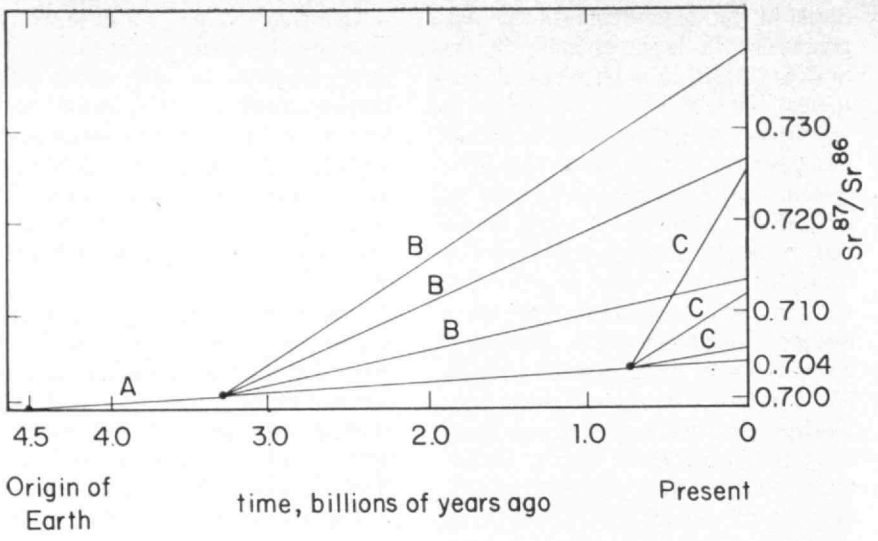


Figure 4: The alternative to the findings suggested in Figure 3 would be that the initial Sr^{87}/Sr^{86} ratio at the time of origin of any crustal material would be considerably greater than in the mantle. The plot then would resemble that shown in this figure. This would suggest a reworking of older crustal materials that had been enriched in Rb for a long period of time.

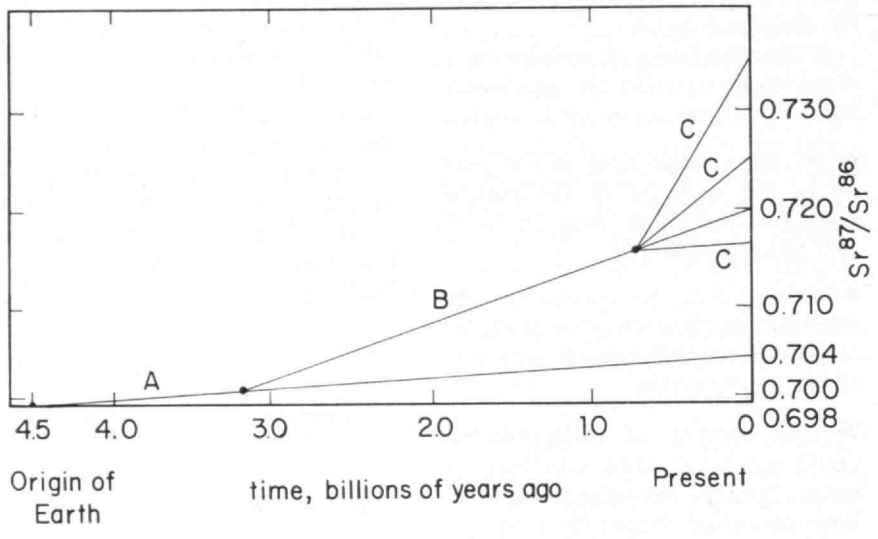
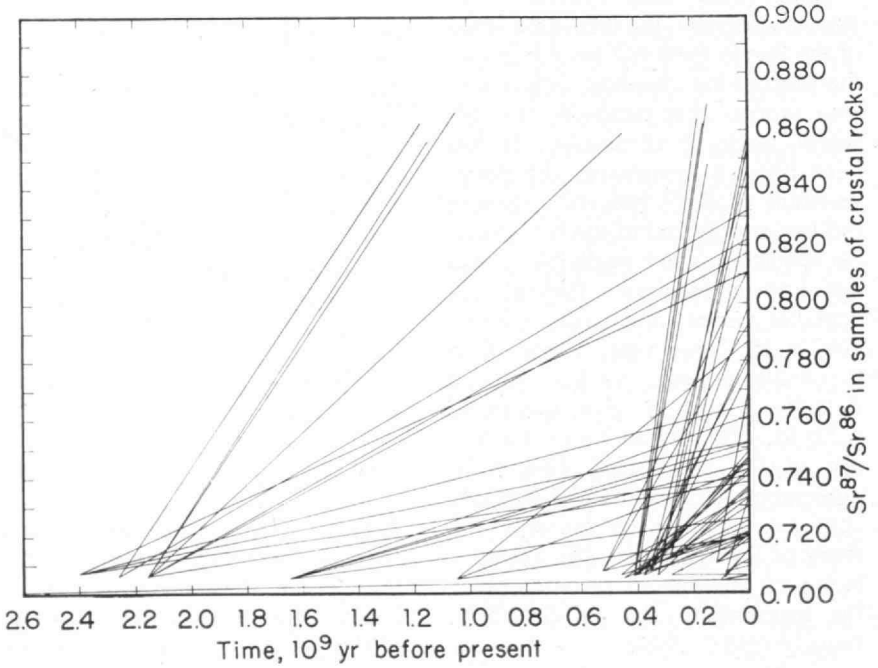


Figure 5: This figure shows actual measurements on samples of crustal rock. As can be seen, the growth lines converge in the past to points slightly above the mantle line. Thus they approximate the case indicated by Figure 3 above more closely than that indicated by Figure 4.

This indicates an origin in which new material from depth was mixed with a minor proportion of older Sr^{87}-rich strontium from the preexisting crust.



These three figures are further explained in the text of the article on the next page.

Ontario; and Duluth, Minn., occurrences, which are all at least one billion years old. Gunter Faure, '61, investigated these deep-origin rocks as a graduate student and postdoctoral fellow, and demonstrated that the layer below the crust giving rise to these volcanic materials is universally quite homogeneous.

The primordial value of .698 for the Sr^{87}/Sr^{86} ratio in the earth at its beginning has increased in the relatively homogeneous regions beneath the crust to .704. This is very different from the case of the lighter rocks that form the continental crust, which have increased by many times this amount. When by partial fusion, extracts from the interior rise and form the more silica-rich rocks of the continental crust, these are much enriched in Rb relative to Sr. This new so-called "sialic" material starts off with a relative isotopic abundance of Sr^{87} equivalent to that in the deep interior, but this rapidly increases owing to the enrichment of the parent Rb^{87}. This fact permits us to study the history of development of the crust in a way which was not possible before. The radiogenic isotopes of lead, developing from uranium and thorium, have been exceedingly useful for other purposes, but the parent and daughter elements are not separated as positively as Rb and Sr in the primary geochemical differentiation in which we are interested.

It has been possible for a number of years to measure the time of last crystallization of rocks by radiometric age-dating methods. These dates, however, tell nothing of the history of the material prior to its last crystallization. There has been an unresolved question whether most of the materials of the continental crust were separated from the interior early in earth history and have simply been reworked ever since, or whether these materials have been rising from the interior periodically in a continuing process. This question also bears on the degassing and dewatering of the earth to form a growing atmosphere and oceans. The development of radiogenic Sr^{87} in crustal materials permits us to answer these questions because no amount of recrystallization or re-fusion can eradicate the history of association with relative enrichment of Rb, as the isotopic abundances cannot be changed by this process.

Let us examine this question in a diagram. Figure 3 demonstrates one possible model for the growth of radiogenic Sr^{87} relative to Sr^{86} in different parts of the earth. At the time of origin of the earth the Sr^{87}/Sr^{86} ratio is .698. The ratio in the interior region (mantle) increases uniformly to a present-day value of .704 as indicated by the development line marked *A*. If at some time long ago some crustal materials separated and formed a complex of rock masses exposed at the surface, each with a different but high Rb^{87}/Sr^{86} ratio, the present Sr^{87}/Sr^{86} ratios in these would be much higher. By measuring the present values of Sr^{87}/Sr^{86} in these various rocks and also their Rb^{87}/Sr^{86} ratios the development lines marked *B* can be extended backwards in time. If they intersect the mantle development line *A*, this point of intersection indicates that this group of crustal rocks originated from the mantle, and the point also indicates the time of the separation. Similarly, a younger group of rocks may be found to have the development lines marked *C*. If it turns out that most major crustal units show development lines that intersect on the mantle line *A*, and if these intersection points are well spread over the time span of geologic history we can conclude that a continuing process of separation of crustal materials is at work.

On the other hand consider Figure 4. In this second possible model essentially all of the sialic crust separated early as indicated by an average line *B*. We know from geologic studies that there is some migration of surface materials to the continental margins and a reworking of these to form new masses of rock. In this case a newly formed complex rock system would show development lines indicated by *C*, intersecting on *B*, not *A*. The point of intersection would be more removed from the mantle line *A*, the younger the time of reworking.

We have been able to differentiate between these two extreme models by studying a large number of crustal rocks. A summary of the actual measurements is shown in Figure 5. It can be seen that the intersection points more closely approximate those in Figure 3 than those in Figure 4, but the intersection points are generally slightly above the mantle line. This is believed to be caused by the mixing of old radiogenic Sr^{87} from the pre-existing continental area with the new sialic material from below. The process appears to be dominated by the addition of the new material from below, however, which means that the continents must be growing in size.

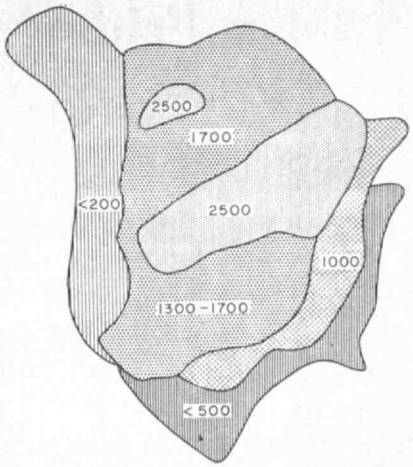


Figure 6: This map indicates the approximate distribution of ages in the crystalline basement rocks of North America. The numbers represent age in millions of years.

If our continent is mapped on the basis of the age of the crystalline basement rocks underlying the thin veneer of sediments, as is shown in Figure 6, the rate of growth of the continent can be measured in terms of its aerial extent at the surface. By wide sampling in this manner, it has been found that the process of separation of the crust from the interior has been going on at a fairly constant rate since about three billion years ago. In fact it has been found that the continental areas of the earth have been increasing at the expense of the ocean basins at a rate of about 35,000 square kilometers per million years.

Many other questions can be studied by these isotopic relationships and at present we are looking into the rate of recycling of geologic materials at the surface, the origin of mineral deposits and specific rock types, the origin of tektites (glassy objects that appear to be extraterrestrial), and Mohole samples. From the success so far we can see the utilization of these radiogenic tracers extending into all branches of earth and planetary science.

A 'Man Friday' For Astronauts

A servant designed at M.I.T. will be at their feet to help them get to the moon and back

WHEN three U.S. astronauts lie in couches to embark for the moon, a guidance and navigation system designed at M.I.T. will be at the feet of the human navigator. Spokesmen for the Instrumentation Laboratory joined those of the National Aeronautics and Space Administration, and companies producing the system's components, in briefing the press this fall on its details.

The apparatus now being built will tell the Apollo spacecraft's crew where they are and how fast they are going, determine the direction in which the vehicle should be steered, and provide the required control signals. It is so designed that it can operate both automatically and in response to commands from the human navigator, and can do its work either with the help of instructions from the earth or without them.

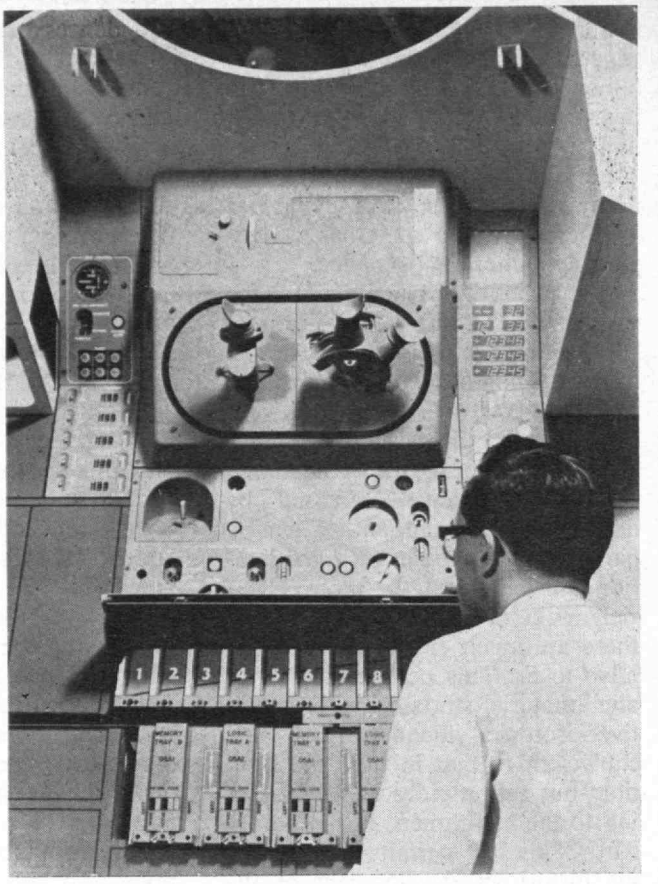
Its three principal parts are an inertial measurement unit, an optical measurement unit, and a computer. These will be in a space only about four feet high, two feet deep and three feet wide, behind a panel which the astronauts will face when they rise from their couches. That panel will place at a man's fingertips means of making observations, consulting and controlling the system, and having displayed on a screen for him a combination of a road map, almanac, and manual.

The inertial measurement unit behind this panel will have a stable inner member containing three inertial reference integrating gyroscopes, to hold a three-axis frame of reference in space; and three pulsed integrating pendulum accelerometers, to sense forces acting on the ship. These will feed digital data to the computer.

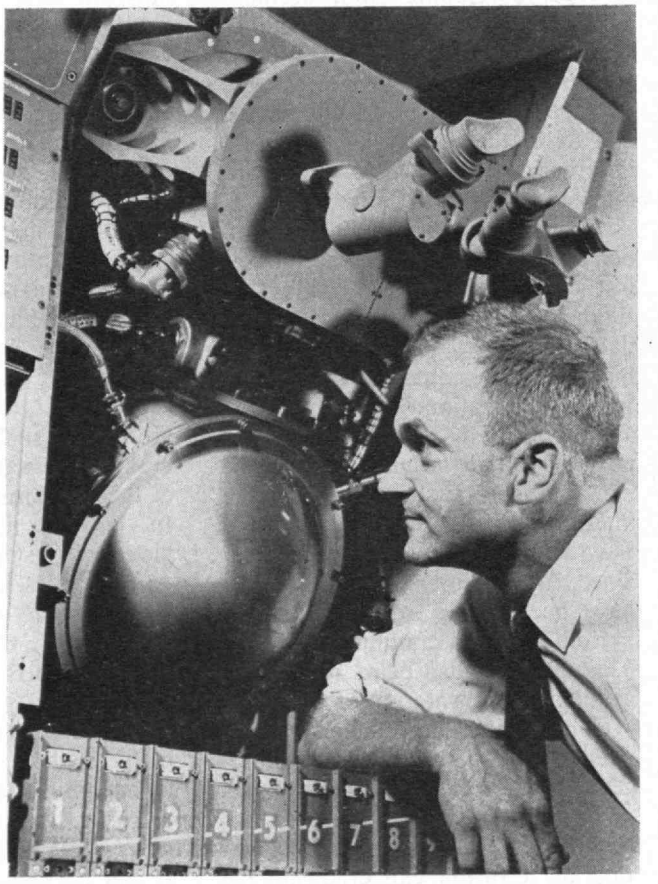
The optical system will include a scanning telescope, and a sextant by which angles between stars and the earth or moon landmarks or horizons can be measured. Attitude controls will enable the man using them to maneuver the vehicle for sightings, and buttons will enable him to consult the computer while making observations.

The computer, less than a cubic foot in size and weighing less than 60 pounds, has been called "an intelligent servant with high-level capabilities." It is the first general purpose, operational, parallel computer especially organized for such deep-space journeys.

Milton B. Trageser, '51, is directing the Apollo program in the M.I.T. Instrumentation Laboratory; David G. Hoag, '46, is the project's technical director, and many other Alumni are involved. The AC Spark Plug Division of General Motors Corporation, the Kollsman Instrument Corporation (a subsidiary of Standard Kollsman Industries, Inc.), the Raytheon Company's Space and Information Systems Division, and the Sperry Gyroscope Company are principal contractors.



Mockup of the Apollo's guidance and navigation panel with sextant and telescope at top and computer trays at bottom.



David G. Hoag, '46, and inertial measurement unit that will be directly behind the panel Apollo's crew will see.

New Yorkers Open a New M.I.T. Center

It will link Alumni and their alma mater in beneficial ways

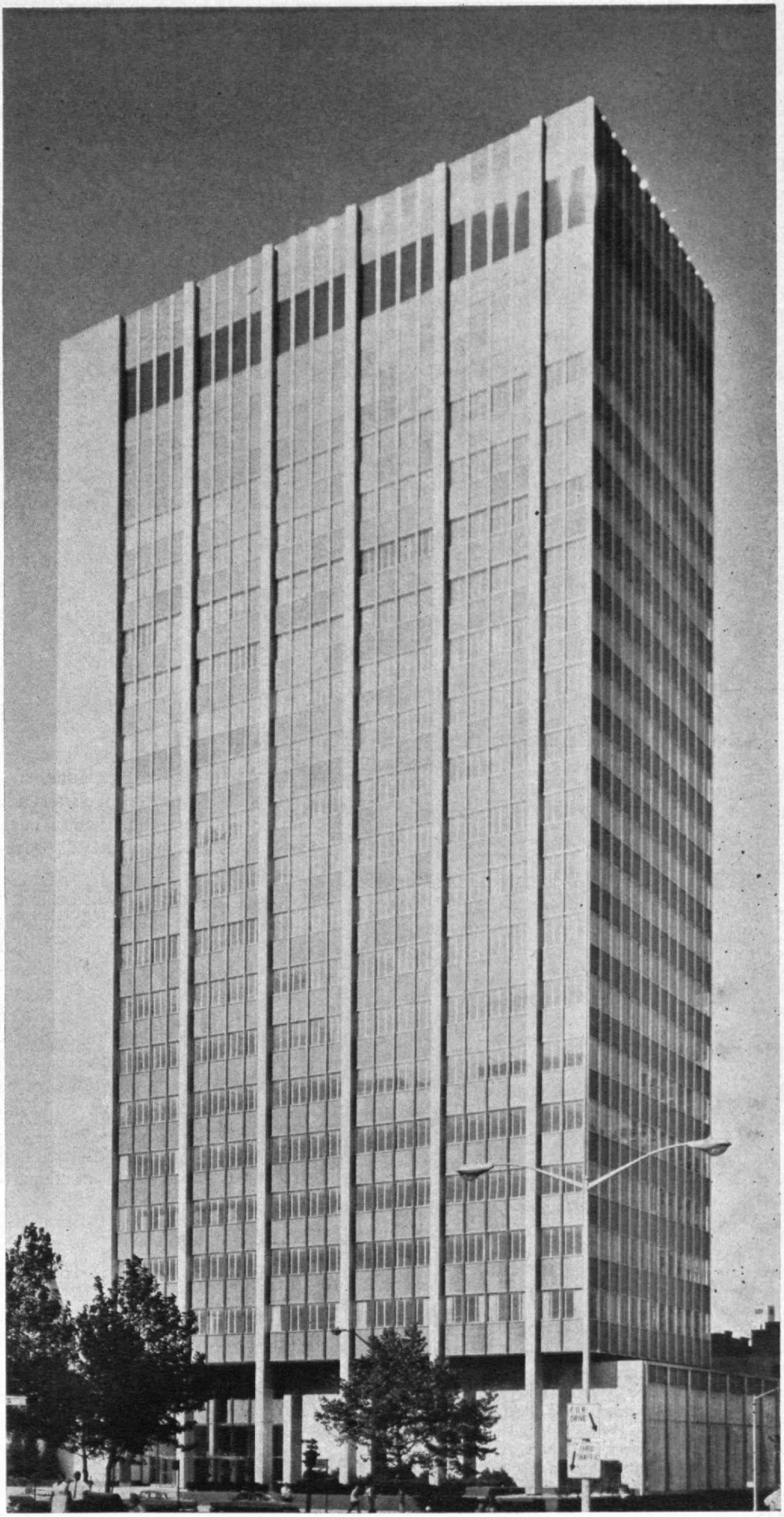
A NEW KIND of bridge was opened in New York last September 26 between M.I.T. and its Alumni. To dramatize the event, a chain was cut with a flash of light from a maser. Three thousand persons were present, and more than 900 already have joined the organization thus opened.

This M.I.T. Alumni Center of New York, said President Julius A. Stratton, '23, is a fresh and invigorating venture which "goes beyond anything that ever has been undertaken previously by an alumni group." Its objectives are to enable the Institute to help former students keep abreast of advances in engineering, science, and management, and to enable them to work more closely with the Institute.

Its headquarters are in the new United Engineering Center building (shown at the right) on East 47th Street near the United Nations Plaza. Twenty-one engineering societies and joint bodies with a total membership of 360,000 have national offices there, and members of the M.I.T. Center will share the building's facilities with them. These include a large library, exhibition hall, and ample rooms for lectures, seminars, luncheons, and dinners.

Paul G. Hoffman, Managing Director of the United Nations Special Fund, and Peter Thacher of the U.S. Mission to the United Nations, welcomed the M.I.T. men to the neighborhood at the dedication ceremony. Armand D'Angelo, Commissioner of the City's Department of Water Supply, Gas and Electricity, spoke similarly for the city; and Ernest Kirkendall, General Secretary of the American Institute of Mining, Metallurgical and Petroleum Engineers, represented other groups in the building.

(*Concluded on page 52*)



Institute Yesteryears

As recalled by the late H. E. Lobdell, '17

25 Years Ago

ALTHOUGH a tuition increase, from $500 to $600, became effective with 1938-1939, Registrar J. C. MacKinnon, '13, was able to announce that total enrollment was 3,093 (up 127 from 1937-1938), including 692 (up 31) in the Graduate School, and 656 (up 51) freshmen of the Class of 1942. Of the 3,093 in the student body, 231 (7.5 per cent) were foreign students who came from 43 countries.*

► In his 5th Annual Report, covering fiscal 1937-1938, Treasurer Horace S. Ford emphasized that "of the $1,505,000 received from students, $1,452,000 was from tuition fees. Of this latter, $1,171,000 (82 per cent) came in cash, $83,000 (5 per cent) through undergraduate scholarships and awards, $94,000 (6 per cent) through graduate scholarships and awards, and $104,000 (7 per cent) through loans from the Technology Loan Fund."

► On October 31, the Executive Committee of the Alumni Association granted recognition to the newly organized group of Alumni at Newport News, Va., under the title: M.I.T. Club of the Virginia Peninsula.

► Administrative appointments effective in the autumn of 1938 included: *Edward L. Moreland, '07,* who had been the 42d President of the Alumni Association in 1935-1936, as Dean of Engineering; and *Harold L. Hazen, '24,* as Head of the Department of Electrical Engineering.

50 Years Ago

REGISTRATION for 1913-14 was up 74 over the previous year, to a record total of 1,685. Of these, 415 were entering freshmen of the Class of 1917. Candidates for advanced degrees totaled 40.

Horace S. Ford

► In presenting the plans for the new Institute buildings in Cambridge to the Alumni Council, simultaneously with the announcement that Stone & Webster had been retained as construction engineers, President Richard C. Maclaurin said:

"The question that will be asked at once is why has a continuous group of buildings been adopted for the educational part of Technology? There are a number of cogent reasons. Points of advantage lie in the convenience of this plan to students and the saving of time and steps by bringing the class-rooms nearer together. Separate buildings mean much greater cost and, finally, the present plan lends itself admirably to the growth of departments."

75 Years Ago

REGISTRATION for 1888-1889 totaled 827. There were 251 freshmen of the Class of 1892. Seventeen of the 827 were foreign students, including the Institute's first Turkish student, who was *Nicholas T. Paraschos, '92.*

► Beginning with 1888-1889, Course X, Chemical Engineering, was added to the curricula.

► Treasurer John Cummings, in his Annual Report for the year ending September 30, 1888, noted that current income of $189,831 had been $12,028 less than expenses of $201,859.

► The country being involved in another Presidential election, as was customary upon such an occasion at the Institute, there was to be a "Torchlight Procession." For this the Editor of *The Tech* demanded a full turnout although "there are some men who will not come on account of the cost of the uniform, or because they have no interest in the procession. That a man, a member of such an Institute as ours, where four years of his life are passed, should feel so little interest in an affair common to all students as to be unwilling not only to go, but also to contribute to the subscriptions raised to defray the necessary expenses, is something of which to be most deeply ashamed.

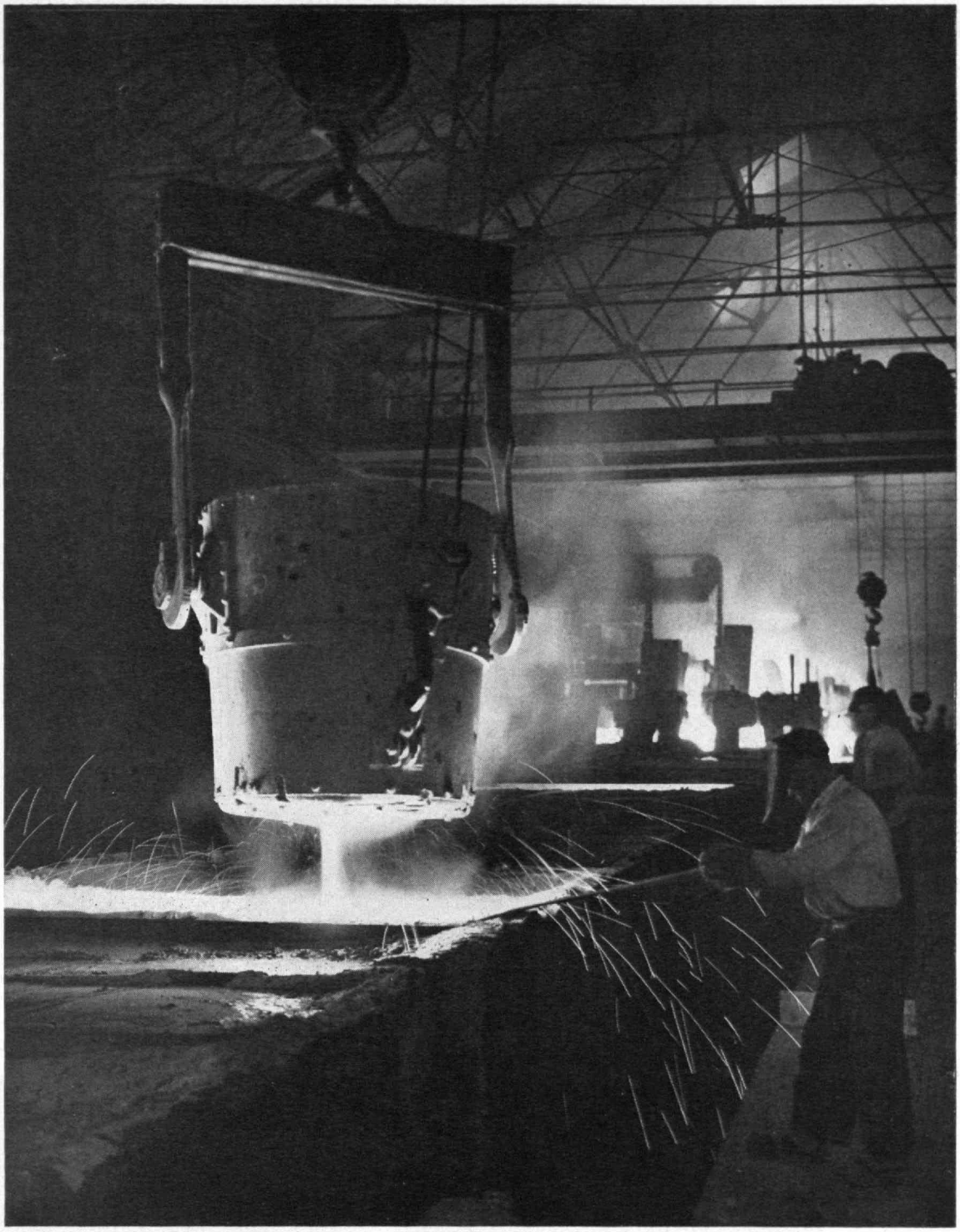
"Of course no objections will be raised as to the politics of the procession. The Institute has voted to go in the Republican demonstration, and it would be too extravagant for any one to refuse to go because he is a Democrat. Out-of-town fellows may perhaps find it a little inconvenient, but for those who are unable to return home that night, cots will be provided in the gymnasium."

The Editor's exhortations were effective, and in his next issue he recorded: "It speaks well for the management of the Torchlight Committee in having everything go off so smoothly the night of the procession. The band was excellent, and enough fireworks were supplied for each man to burn the necessary holes in his uniform."

100 Years Ago

BY THE TIME of the 16th Meeting of the "Government," held November 24, 1863, it was obvious that the Institute's activities had outgrown the quarters occupied for the past 12 months in the Mercantile Building at 16 Summer Street, Boston—for which the rental figure had been $572 per annum. A committee had consulted, therefore, with the landlord and had tentatively arranged for additional space at a total rental of $1,000 per annum.

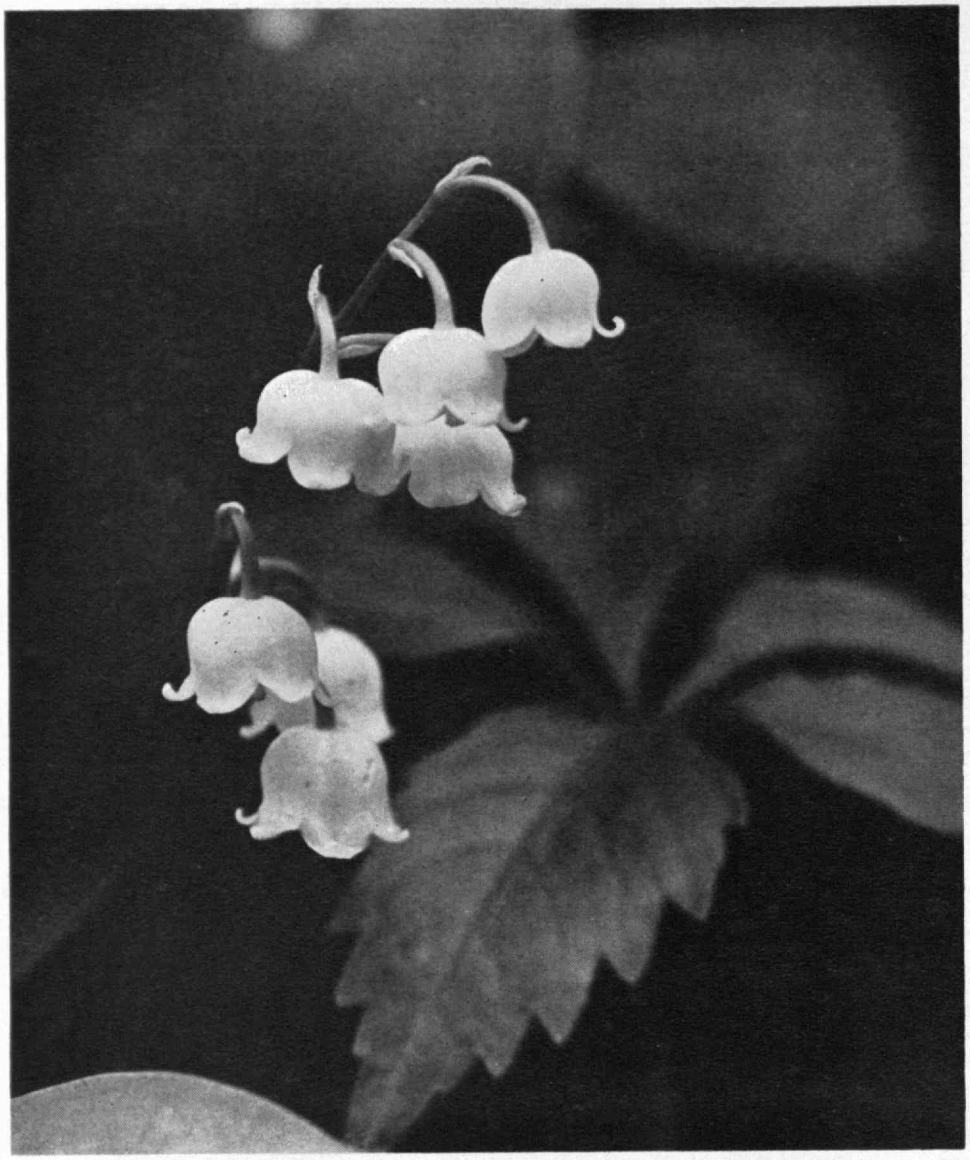
* Actually from one less than 43 countries inasmuch as the Office of Registrar even in 1963-1964, under Registrar Robert E. Hewes, '43, persists in its refusal to recognize that in 1707 Scotland merged with England to form the United Kingdom.



Fay S. Lincoln, '22

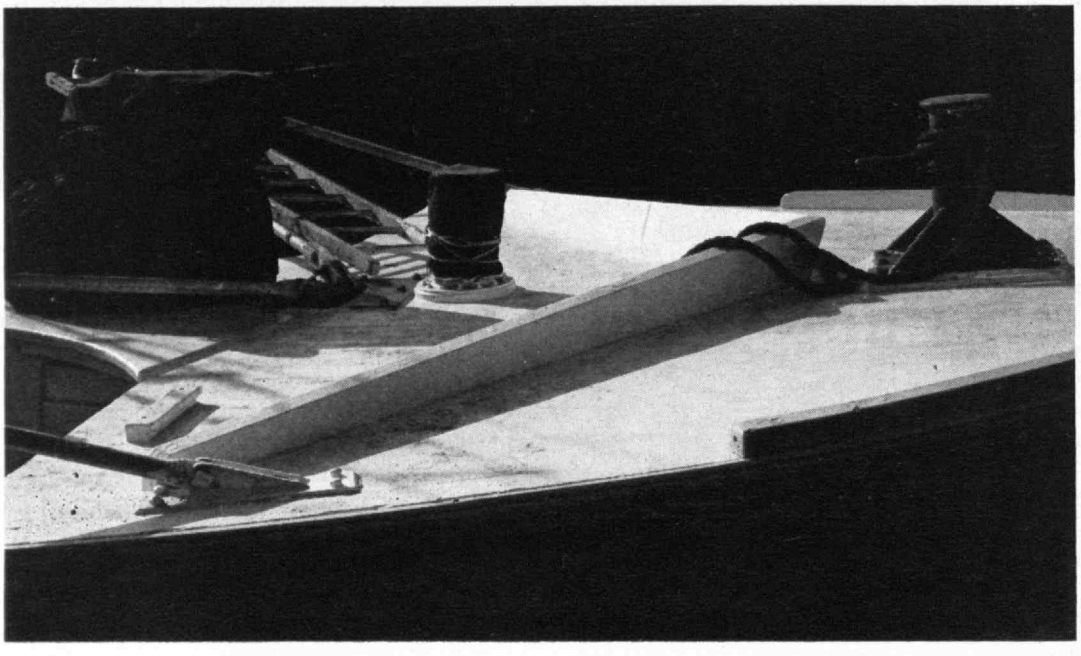
Photography by M.I.T.'s Alumni

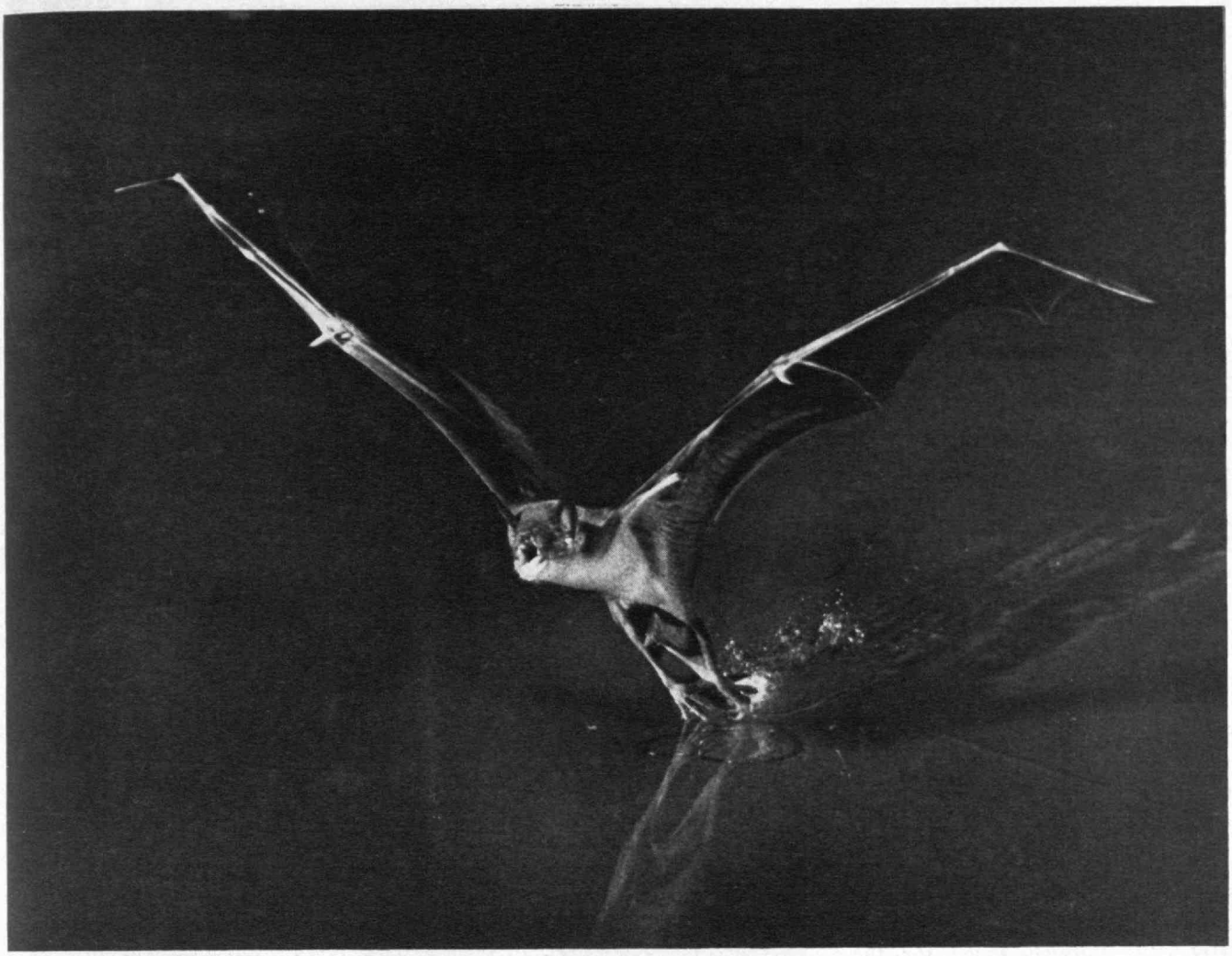
A sampling of the pictures taken by former students of the Institute, from an exhibit in the Kresge Auditorium on their annual day on the campus last spring



Robert C. Cowen, '49

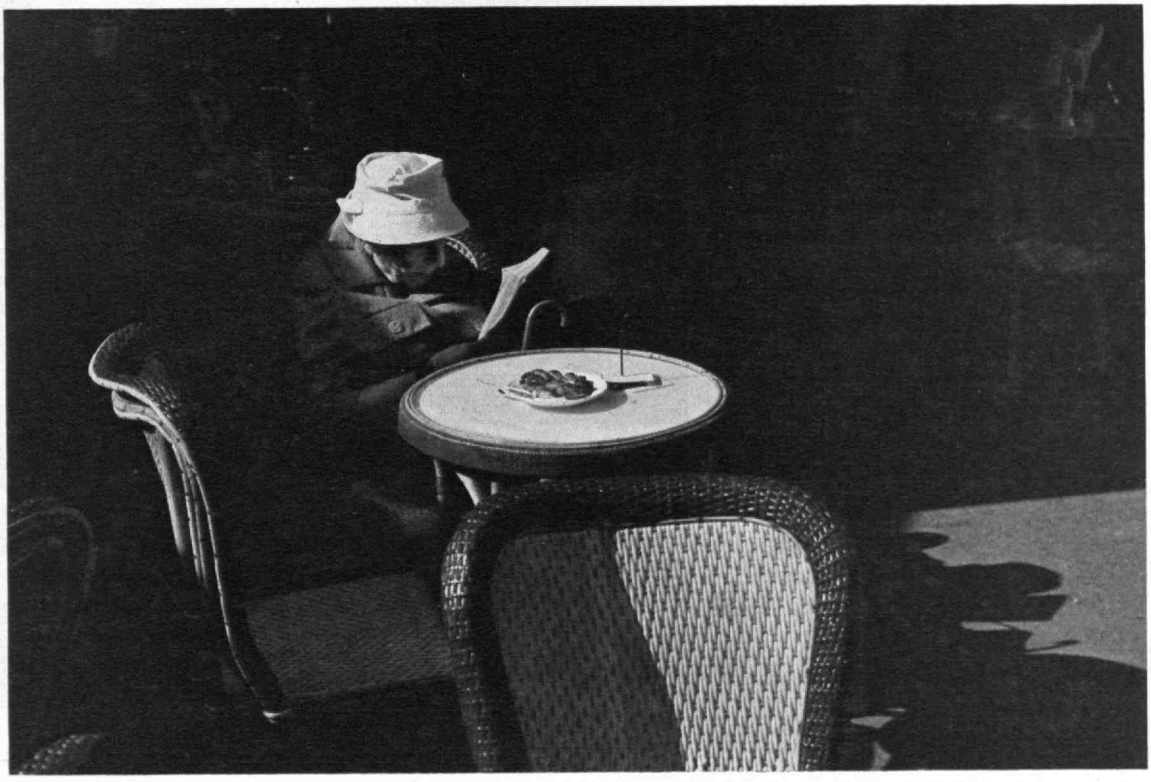
Gregory Smith, '30





David A. Cahlander, '59

Philip Lieberman, '56



In View Of the Second Sky

Radio astronomers hope to map the sun and the moon with an antenna directed by computers

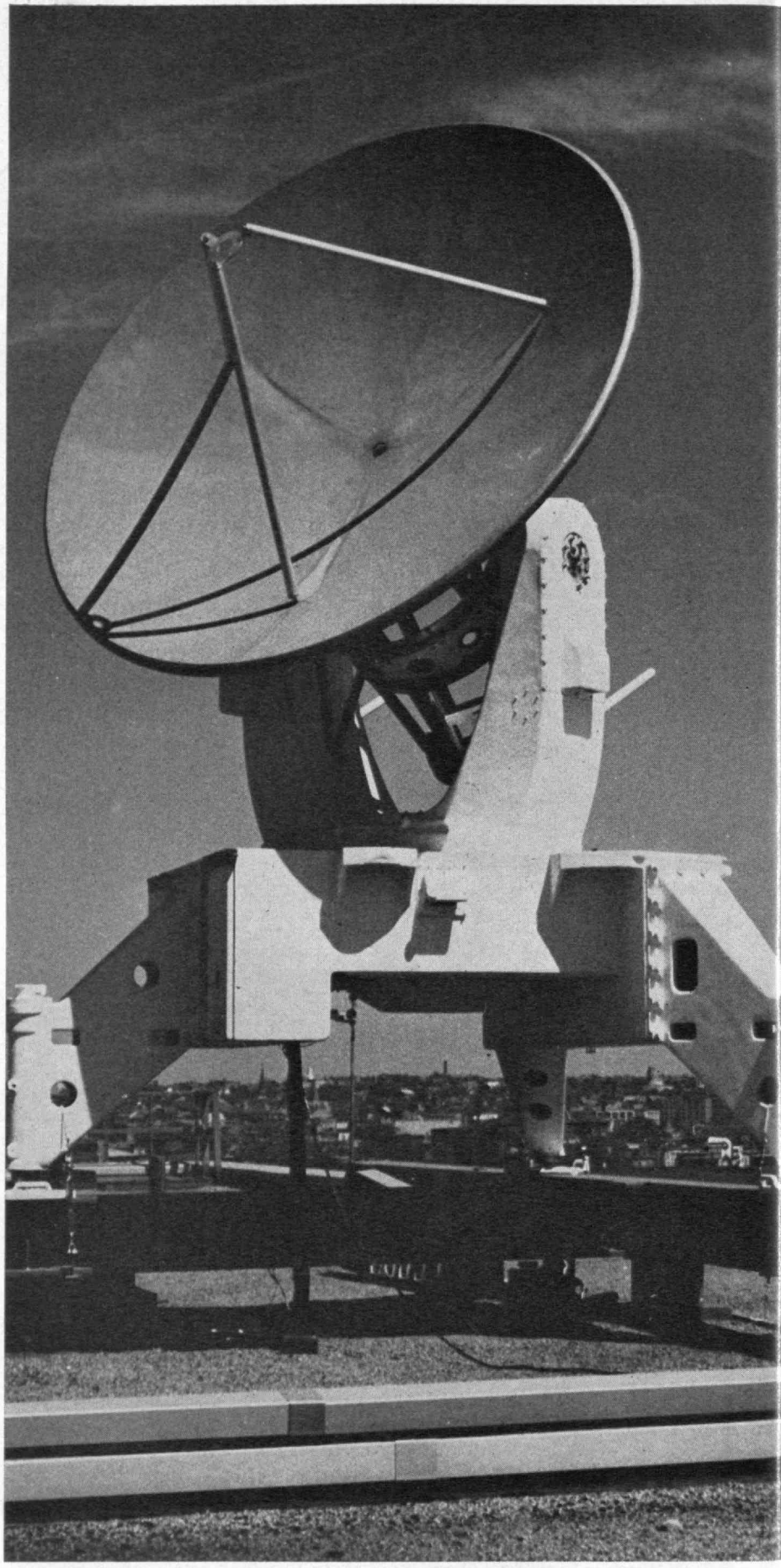
BY SAMUEL JAY KEYSER

WHEN Venus entered its inferior conjunction last December, M.I.T. men were watching two radio antennas. The first, 28 feet in diameter, was atop Lincoln Laboratory in Lexington, Mass. The other, a 19-inch parabolic dish with peripheral gear weighing slightly less than 24 pounds, was some 36,000,000 miles away, having traveled 109 days through space for the rendezvous. This second antenna, of course, was part of the Mariner II spacecraft.

Sharing in the planning of both antennas was Associate Professor Alan H. Barrett who, along with Assistant Professor J. William Graham, '52, heads the Radio Astronomy Group in M.I.T.'s Research Laboratory of Electronics.

Both experiments helped to answer questions which have long puzzled man about the morning and evening star. We now know that Venus is a hot, dry planet with a surface of sand or dust, a mean temperature of 800 degrees F., a cloud layer 15 miles thick; in other words, a planet which could not possibly support life such as inhabits the earth.

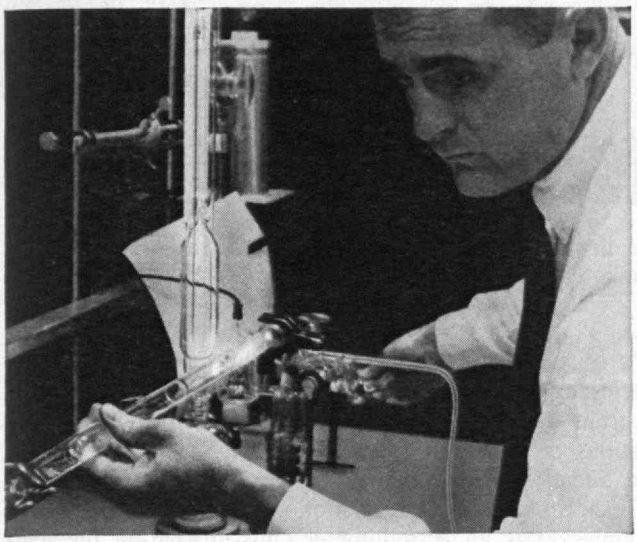
The science responsible for these revelations was born in 1932 when Karl Jansky first realized that the background hiss and static picked up on his 14.6-meter New Jersey antenna came from an extraterrestrial source which he identified as the Milky Way. His work opened a



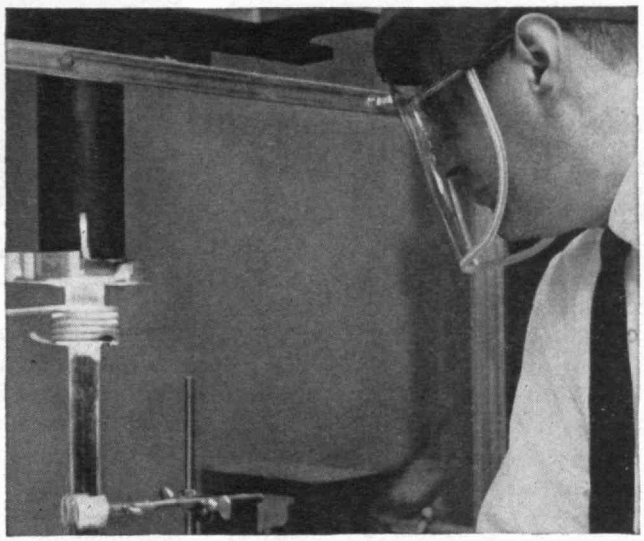
The new radio telescope on the roof of the Compton building at the Institute.

IBM® asks basic questions in materials

How can we develop better semiconductors?



In this method of preparing ultrapure gallium arsenide, gallium reacts with arsenic in a quartz tube with oxygen added under pressure to suppress dissociation of SiO_2.



In this alternative method, gallium arsenide crystals are pulled from gallium and arsenic melted in aluminum nitride crucibles, which do not liberate silicon contaminates.

The immense speeds at which computers must operate place stringent requirements on the transistors and diodes which perform calculations. To increase further the speed of semiconductor devices now operating in millionths or even billionths of a second requires not only refinements in present designs and fabrication techniques, but also new materials that are inherently superior to materials presently being used, like germanium and silicon. IBM has been working to transform the great potential of one such new material, gallium arsenide, into useful devices.

Gallium arsenide has a much higher electron mobility than germanium and silicon. Thus it is potentially much faster. It has a larger band gap, permitting operation at higher temperatures. It is chemically and mechanically stable. However, the difficulty of producing gallium arsenide of sufficient purity has, until recently, limited its application.

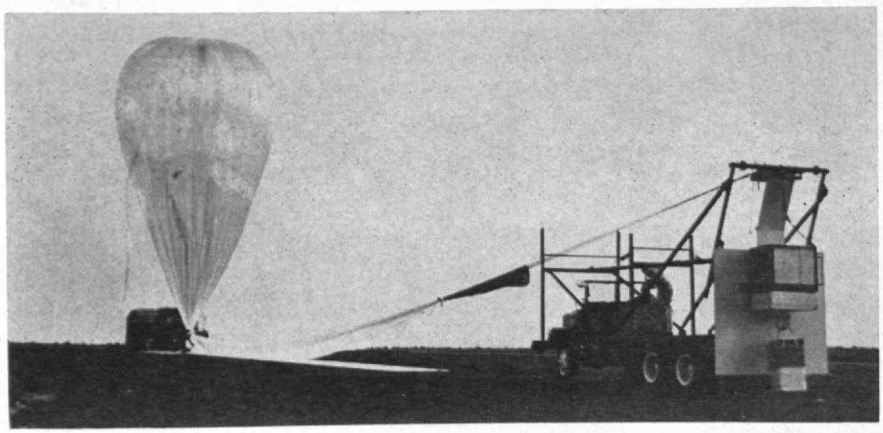
IBM scientists have developed the reproducible processes, shown above, which greatly improve the purity of the material. Using their new processes, they can produce materials with electron mobilities —an important measure of purity—of about 8,000 cm^2/volt-sec., as compared with previously reported mobilities of about 6,000 cm^2/volt-sec. Mobilities in this high-purity gallium arsenide are about twice those of germanium and four times those of silicon. These mobilities may make it feasible to fabricate semiconductor devices of higher speed than previously available.

The potential of high-purity gallium arsenide was first exploited by IBM scientists in a new gallium arsenide-germanium heterojunction diode. The difference in conduction band energies between gallium arsenide and germanium permits a diode to be made using n-type material on both sides of the junction. In other words, n-type gallium arsenide is used on one side of the junction and n-type germanium on the other. Such a configuration virtually eliminates minority carriers. Since the chief barrier to faster diode switching has been minority-carrier storage time, the heterojunction device has the potential for much faster switching than conventional p-n junction diodes. Its calculated switching time is on the order of a few picoseconds (trillionths of a second). Measurements have shown it to be faster than the fastest available measuring circuits. This configuration had been tried earlier, but was unsuccessful until better gallium arsenide was made by IBM scientists. This is an example of the way in which the development of new materials like gallium arsenide makes it possible to produce components which can keep up with the increasing speeds of new generations of computers.

If you have been searching for an opportunity to make important contributions in materials, space, programming systems, or any of the other fields in which IBM scientists and engineers are finding answers to basic questions, please contact us. IBM is an Equal Opportunity Employer. Write to: Manager of Professional Employment, IBM Corp., Dept. 615L, 590 Madison Avenue, New York 22, N. Y.

whole new horizon to man—the radio sky.

Under sponsorship of the National Aeronautics and Space Administration and a Joint Services Contract (Army, Navy, Air Force), one of the newest of the radio telescopes being trained on this second sky is now sitting atop M.I.T.'s Karl T. Compton Laboratories. This telescope, designed by students under Professors Barrett and Graham, will study a portion of the electromagnetic spectrum largely ignored in radio source detection. Whereas the Mariner II receiver was sensitive to wavelengths of 13.5 and 19 millimeters and Lincoln Laboratory's to 11.8 and 8.5 millimeter wavelengths, the telescope on the Compton building will scan the radio sky at wavelengths near four millimeters.



A balloon prepared to lift a 300-pound package from the rear of a truck at Palestine, Texas, and take it aloft for M.I.T. research.

The Surface Problem

A radio telescope reflector is only as good as its surface. To obtain accurate reflection and thus accurate measurement of these radio waves, which are only half a pencil width long, the 10-foot parabolic surface of the reflector was lined with a plastic autobody filler machined to tolerances in the neighborhood of a ten thousandth of an inch. The surface, which looks very much like fine-grained sandpaper, provides sufficient accuracy to enable the reflector to operate at frequencies up to at least 100 kilomegacycles. A radiometric receiver at four millimeters also has been constructed for use with this reflector. At this wavelength the telescope will have a beamwidth of 1/10°.

This beamwidth is important. Many radio sources in the sky are essentially point sources, i.e., they subtend an arc which, for all practical purposes, is equal to zero. It is impossible to "see" a particular portion of these sources; it is often impossible to resolve individual sources which together constitute a single radio source for astronomers. These sources are simply too far away or else subtend, from the earth's point of view, too small an arc.

Two well-known bodies which have a great influence over the earth, however, are not point sources. The sun and the moon both subtend an arc in the sky of ½° as was vividly demonstrated by last summer's eclipse. This is five times as large an angle as the beamwidth of the R.L.E. telescope. Thus it will be possible to train this telescope on various portions of either the sun or the moon and measure the radio emissions. Since the radiation intensity of an emission is an accurate index of the temperature of the emitting body, thermal maps of both these bodies should be attainable with this telescope.

But this isn't all. Radio telescopes often detect emissions emanating from somewhat below the surface of celestial bodies. Astronomers are already able to predict sunspots even before they appear. This is done by detecting characteristic radiowave activity that seems to come from certain points in the sun. Some few days later a sunspot will appear on the surface, apparently directly above the active area. Since certain materials are known to give off characteristic radiowave patterns, Barrett and Graham hope to contribute data to the future determination of the actual stuff that the sun and the moon are made of by examining these emissions. This ultimately should lead to models of the physical inner structure of both bodies as well as to thermal maps.

The Aiming Problem

A major problem in thus surveying the sun and the moon will be aiming the telescope. The targets, after all, are only ½° wide and the beamwidth is only 1/10°. The telescope will be pointed at its target with an accuracy of 1/100°. The problem is much like that in aiming a gun at a target. If the bullet is large, one need not be so accurate as with a tiny bullet. But they are aiming with a bullet 1/10° wide and are requiring that it miss a particular target by not more than 1/10th of the bullet's width. Moreover, both the targets and the aiming platform—the earth—will always be in motion, and detecting a four-millimeter emission within the telescope's tiny beamwidth and keeping within one hundredth of a degree of the emitting point will require considerable accuracy.

To help achieve accurate pointing, two computers are being used. The telescope mount, a Nike-Ajax radar-tracking pedestal, is controlled in azimuth and elevation co-ordinates but celestial co-ordinates are used to locate their targets. Thus one computer has been programmed to convert one type of co-ordinates into the other. It also takes into account the rotation of the earth with time. These computations are performed on a PDP-1 computer connected by cable to the telescope's electronic equipment. Through an ingenious time-sharing technique, the telescope's program intervenes only once a minute during the normal operation of the PDP-1, and this intervention lasts about 10 milliseconds. The rest of the time a small computer, built by Professor Graham and his students, performs interpolations on the basis of the PDP-1 computations and so continues to aim the telescope.

The telescope mount has been equipped with azimuth and elevation digital read-outs. Whenever a discrepancy between these actual co-ordinates and the computer-determined co-ordinates occurs, compensatory action in the mount's servomechanism is taken. In this

(Continued on page 42)

Estates–
Real and Personal

As a Trust Company we give most of our attention to securities. But often a plantation in the South, a ranch in the West, or a home in Connecticut calls for just as specialized attention as larger sums invested in stocks and bonds.

Of all the financial problems that confront a family, those relating to real estate are apt to be the most baffling. There are cases that call for incisive judgment and action to cope with lax management and needless expenses which sometimes are painfully present.

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In View of the Second Sky

(*Continued from page 40*)

fashion the telescope will be able to locate a position in the celestial sphere, stay with it, and take measurements of the radio emission as the pin-pointed source moves.

If all measurements of radio phenomena in which men are now interested could be made from ground-based telescopes, the task of the radio astronomer, though still challenging, would be somewhat easier. But this, unfortunately, is not the case. An important property of the earth's atmosphere, attenuation, makes matters difficult by absorbing certain wavelengths. If the atmosphere is opaque to such wavelengths, they do not reach ground-based receivers. While the atmosphere freely admits radiation at four-millimeter wavelengths, for example, those clustering just above and below four millimeters are strongly absorbed, and much valuable information which might otherwise reach the ground is lost.

To overcome this, Barrett has already launched the first of a series of experiments to carry aloft a six-inch parabolic antenna by balloon to a point well above the atmosphere. At the balloon's maximum altitude it is possible—given a stabilized platform oriented on the sun and an antenna which is accurate to within three minutes of arc—to take radiometric measurements of the sun's emission at five-millimeter wavelengths. These wavelengths are almost completely absorbed by the oxygen molecules in the atmosphere, and thus hidden from ground-based instruments. As balloon techniques and radio equipment are perfected, stratospheric observations will become possible not only of the sun and the moon, but also of more distant sources.

Another kind of experiment being planned by R.L.E.'s Radio Astronomy Group deals not with extraterrestrial sources, but with the earth itself. As troublesome as attenuation is to astronomers seeking information about outer space, it can be a valuable ally for those seeking to know more about the nature and physical structure of our own atmosphere. Thus geophysics will fall heir to some of the insights made possible.

(*Concluded on page 44*)

New England Life agent Dave Bell, University of Vermont '59, discusses a "Savings for Success" insurance program with clients David and Aline Shader.

WHO EVER SOLD A MILLION DOLLARS OF LIFE INSURANCE – IN ONE YEAR – IN BURLINGTON, VERMONT?

Dave Bell did. And a handful of others, over the years. Selling a million is excellent production in New York or Chicago. In Burlington it's exceptional, particularly when accomplished by a man *in his first year in the business.*

Extraordinary salesman? Yes and no. Dave's a likeable, unassuming kind of guy whose greatest assets are enthusiasm and a willingness to learn. He's a college graduate, to be sure, and was an officer in the Army Rangers before joining New England Life's Burlington agency. Such bright young men starting bright new careers have been known to respond to supervision as Mickey Mantle might respond to batting tips.

But Dave Bell listened and learned, tried techniques he doubted could work, found they did, and came back for more. He sold no big pension or business cases that first year. He did bring a measure of financial security to 132 families, of which the Shaders, above, are typical.

Could you be another Dave Bell? The important ingredients, as you've seen, are intelligence, warmth, ambition and the training and support of a good company. If you have the first three, you're eligible for the fourth. Look into it. Write Vice President John Barker, Jr., 501 Boylston Street, Boston, Massachusetts 02117.

NEW ENGLAND LIFE

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Arthur C. Kenison, '19, Boston

John H. Schaefer, '25 Hackensack

Herbert L. Neitlich, '49, Boston

In View of the Second Sky

(Concluded from page 42)

Molecules in the earth's atmosphere not only absorb energy coming in from space, but, when they are excited by radio emissions from some source, these molecules themselves begin to radiate at a particular set of frequencies. For oxygen, the radiation is at five millimeters. This radiation is strongly influenced by the altitude at which the emission occurs. As one moves higher up into the atmosphere, an interesting thing happens: the molecular resonances of certain molecules change in a revealing fashion, and measurements at different altitudes of the emissions provide a precise method for determining the pressure variation throughout the atmosphere. As a balloon equipped with a radiometric receiver tuned to, say, five millimeters rises slowly up through the atmosphere, it will constantly relay information about the various atmospheric pressures encountered as a function of the changing resonances on the way up. And—to kill two birds with one stone—once the balloon has reached peak altitude, it can then stabilize with respect to the sun and begin to measure five-millimeter solar emissions as well as other emissions from space.

Not only oxygen resonances are being studied. Since the average temperature of the earth is a function of the water vapor present in the atmosphere, meteorologists are extremely interested in learning about the actual amounts and locations of water vapor. In fact the thermal budget of the earth depends upon this information. Surprisingly little, however, is known about water-vapor distribution in the upper atmosphere. The most recent illustration of this, perhaps, was the appearance on February 28, of a high noose-shaped cloud above the Arizona desert. The cloud, which appeared in the evening sky, was photographed by several observers from different parts of the state and a rough estimation of the height of the cloud was in the vicinity of 35 kilometers, far higher than airplanes could reach and far higher than any previously known cloud formation. An interesting question is raised by this freakish event: Where did the vapor come from? Hitherto it was thought that water vapor did not exist in the stratosphere, and it is still a mystery how water vapor in such quantities was introduced at so high an altitude.

Water vapor, like oxygen, also exhibits characteristic radiation when excited and this radiation also changes with pressure at various altitudes. It will be possible to learn more about the distribution of this vapor and thus answers to questions posed by phenomena in the sky.

At the moment, members of R.L.E.'s Radio Astronomy Group expect to make these determinations not from balloon-based radiometers, but rather from ground-based facilities such as the 28-foot Lincoln Lab antenna or the 10-foot R.L.E. antenna. In the future, of course, measurements may be made from balloons or satellites.

These experiments are only a very few of the large number which can at last be undertaken, thanks to the development of radio astronomy. That this young science will tell us more about our own earth as well as the universe in which it exists is perhaps the best testament to the strength of its techniques.

Arthur Snyder: Our Man in Space

ARTHUR SNYDER, a V. P. and company banker at New England Merchants, finances the frontiers of science. His customers include many young and growing Greater Boston companies in space science, atomics, electronics, and other frontier fields. Equipped with an engineering background of his own, Arthur is well qualified to understand and serve these firms with his financial aid and counsel.

ON A TYPICAL DAY, he might study a new chemical synthesis which will require a plant expansion — and a construction loan. Later the same afternoon, he will call on another customer to inspect a new optical instrument and arrange interim financing until a government contract takes effect.

WHEREVER HE GOES, Art is the "man who *is* the Bank"—ready to help with sound decisions on his own. He'll match his time with yours to explore *your* company's frontiers. Talk to him at New England Merchants National Bank, 28 State Street, Boston, RIchmond 2-4000.

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Individuals Noteworthy

(Continued from page 12)

New Posts

NAMED in the news of promotions, elections, and appointments recently were:

Henri P. Junod, '21, as Executive Vice-president, Interlake Steamship Company . . . *Laurence B. Davis, '22,* as Chairman, International Road Federation . . . *Crawford H. Greenewalt, '22,* as Chairman, Radio Free Europe Fund;

Clarke Williams, '24, as President, the American Nuclear Society . . . *Theodore A. Mangelsdorf, '26,* as Executive Vice-president, Texaco Company . . . *Harold W. Fisher, '27,* as a Director and Vice-president—Chemicals, Esso Chemical Company, Inc.;

Walter R. Ramsaur, '28, as Executive Vice-president, Garrett Corporation . . . *John J. Wilson, '29,* as Chairman of the Board, United-Carr Fastener Corporation . . . *Edward M. Pritchard, '30,* as General Manager, Military Systems Division and as Vice-president, Lockheed Electronics Company;

Richard K. Baltzer, '31, as President, Avon Sole Company . . . Dean *Gordon S. Brown, '31,* as a Member, *ad hoc* Committee on Research and Development in Electrical Power Industry, U.S. Power Commission . . . *Rafford L. Faulkner, '33,* as Director, Division of Raw Materials, U.S. Atomic Energy Commission;

James E. Norcross, '33, as a Director-at-Large, American Welding Society . . . *Felix J. Conti, '34,* as President, the Tredennick-Billings Company . . . Colonel *Daniel F. Shepherd, '34,* as Director, Research and Development, Army Missile Command, Redstone Arsenal, Ala.;

Oswald B. Falls, Jr., '36, as President and Director, Commonwealth Associates, Inc., Jackson, Mich. . . . *William R. Hewlett, '36,* as a Trustee, Stanford University . . . *Robert E. Worden, '36,* as a Director, Wellington Fund and Wellington Equity Fund;

Edwin L. Hobson, '37, as Vice-president and Director of Marketing, Gering Plastics Company, Kenilworth, N.J. . . . *Walter L. Hughes, Jr., '37,* as Professor and Chairman, Department of Physiology, Tufts University School of Medicine . . . *Gordon B. Morris, '38,* as Manager of Construction, British Columbia Hydro and Power Authority;

H. Erich Nietsch, '38, as Vice-president of Sales and Project Development, Robinson Vibrashock Division, Robinson Technical Products, Inc. . . . *Robert B. Gordon, '39,* as Director, Product Operations Division, Atomics International, Canoga Park, Calif. . . . Major General *James B. Lampert, '39,* as Superintendent, United States Military Academy;

Walter B. Brewer, Jr., '40, as Associate General Manager, San Bernadino Operations, and as General Manager, Advanced Planning Division, Aerospace Corporation . . . *Karl L. Fetters, '40,* as 1964 President, American Institute of Mining, Metallurgical, and Petroleum Engineers;

Robert F. Seedlock, '40, as Major General, Corps of Engineers,

(Continued on page 48)

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We can't. The law says so. But this is what we do have: the most extensive Trust Department in the whole Middlesex County area. ■ This means you don't have to trek into Boston to find a bank that can be all things for you: trustee under wills or living trusts, guardian or conservator of property, executor or administrator in the settlement of estates, agent offering investment management services, agent offering financial secretary services, transfer agent for corporate stock, dividend paying agent, registrar of corporate stock, trustee for bond issues, and trustee of pension and profit sharing plans. ■ We have offices in Cambridge, Arlington, Belmont, Concord, and Littleton. You needn't go farther than any of these areas to find some of the finest trust services available anywhere in Massachusetts. For a detailed booklet describing our trust services, just call or write the nearest Harvard Trust office and ask for "How TRUST SERVICE Benefits You and Your Family".

MEMBER F.D.I.C.

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TOTAL ASSETS IN EXCESS OF $135 MILLION

Individuals Noteworthy

(Continued from page 46)

U.S. Army . . . *Alfred B. Booth, Jr., '41,* as Director, Manufacturing Services, Celanese Corporation of America . . . *Albert H. Bowker, '41,* as Chancellor, The City University of New York;

William P. Cadogan, '41, as Director of Research, Emhart . . . *Rogers B. Finch, '41,* as Associate Dean, Hartford Graduate Center, Rensselaer Polytechnic Institute of Connecticut, Inc. . . . *Teddy F. Walkowicz, '41,* as a Director, National Aviation Corporation;

John E. Gayton, '43, as Principal Associate, Midwestern Division, Cresap, McCormick and Paget . . . *Alden A. West, '44,* as Manager, Tidewater District Operation, Defense Programs Operation, General Electric Company . . . *Thomas A. Hood, '45,* as a Director and Vice-president, Vermont Marble Company;

Edwin E. Kintner, '46, as President and a Director, South Portland Engineering Company, Maine . . . *J. Graham McQuarrie, '46,* as a Fellow, the American Society for Quality Control . . . *Roger P. Sonnabend, '46,* as President and Chief Executive Officer, Hotel Corporation of America;

Colonel *John U. Allen, '47,* as Vice-president, Ohio Valley Improvement Association . . . *Albert Openshaw, '47,* as Director of Manufacturing, Mohasco Industries, Inc., Amsterdam, N. Y. . . . *Allen N. Sweeny, '47,* as Vice-president, DeVlieg Machine Company;

Lawrence I. Levy, '48, as Vice-president, Corporate Development, Raytheon Company . . . *George E. Stewart, '48,* as Managing Director, Mobil Chemicals Ltd., London . . . *Gerald L. Thompson, '48,* as Professor of Applied Mathematics and Industrial Administration, Graduate School of Industrial Administration, Carnegie Institute of Technology;

Paul B. Ostergaard, '49, as Vice-president, Lewis S. Goodfriend & Associates . . . *Frank W. Smith, Jr., '49,* as Director, Research and Engineering, Mine Safety Appliances Company, Pittsburgh . . . *William E. Stoney, Jr., '49,* as Chief, Spacecraft Technology Division, Office of Engineering and Development, Manned Spacecraft Center, NASA;

Harrison C. White, '50, as Associate Professor of Sociology, Harvard University . . . *Jack Bordan, '51,* as Dean, Faculty of Engineering, Sir George Williams University, Montreal . . . *Max M. Ulrich, '51,* as Vice-president, Consolidated Edison Company of New York;

Vincent Jaccarino, '52, as Head, Solid State Physics Research Department, Bell Telephone Laboratories . . . *John D. Walker, '52,* as Branch Manager, Cooper-Bessemer of Canada, Ltd., Toronto . . . *James L. Wyatt, '53,* as Vice-president, New Product Development, Joy Manufacturing Company;

Richard S. Gordon, '54, as Director, Central Research Department, Monsanto Chemical Company . . . *Curtis B. Flory, 3d, '56,* as Product Manager—Footwear Materials, Coated Fabrics Division, Interchemical Corporation . . . *S. Donald Sims, '56,* as Senior Scientist, Quantum Electronics Department, Technical Research Group, Syosset, N.Y.

(Concluded on page 50)

Individuals Noteworthy

(*Concluded from page 48*)

Honors to Alumni

RECIPIENTS of recent awards and similar distinctions have included:

Andrey A. Potter, '03, a Citation for Distinguished Service to Engineering and Education by the American Power Conference . . . *William H. McAdams, '17,* the Max Jacob Memorial Award by the American Society of Mechanical Engineers and the American Institute of Chemical Engineers . . . *Arthur C. Hardy, '18,* the Progress Medal Award by the Society of Motion Picture and Television Engineers . . . *William D. Norwood, '23,* the Knudsen Award by the Industrial Medical Association;

Julius A. Stratton, '23, an honorary Doctor of Humane Letters degree by Oklahoma City University . . . *James R. Killian, Jr., '26,* an honorary Doctor of Science degree from the University of Maine . . . *Hunter Rouse, '29,* the Theodore von Karman Medal by the Engineering Mechanics Division of the American Society of Civil Engineers;

Robert B. Semple, '32, an honorary Doctor of Science in Engineering degree by Wayne State University . . . *Charles W. Merriam, 3d, '55,* as a co-author, the "Outstanding Paper" Award of the Joint Automatic Control Conference . . . *James M. Symons, '55,* and *Donald R. Washington, '61,* the Harrison Prescott Eddy Award by the Water Pollution Control Federation . . . *Alain C. Enthoven, '56,* the President's Award for Distinguished Federal Civilian Service . . . *DeWitt R. Petterson, '59,* the Fiber Society Award.

New York Secretary

JAMES NORVAL PHINNEY has become executive secretary of the M.I.T. Alumni Center of New York. A native of Melrose, Mass., and graduate of Johns Hopkins University, he has long been active in the American Alumni Council. He was formerly assistant to the Director of Alumni Relations and student counselor at Johns Hopkins University, and for the last five years was assistant to the president of Pacific University in Forest Grove, Ore.

Nautical Curator

THE NEWLY appointed curator of the Francis Russell Hart Nautical Museum is William A. Baker, '34, designer of the *Mayflower II* built in England and now moored at Plymouth. A recognized authority on Seventeenth and Eighteenth Century ships, Mr. Baker also has been responsible for the redesign of several other historic vessels, including Amundsen's *Gjoa* (first vessel to make the Northwest Passage) which is now in San Francisco. For this work he received St. Olav's Medal from King Haakon VII of Norway. He has written numerous articles and books on nautical history and is a consultant to the *National Geographic Magazine*.

Mr. Baker is supervising engineer of the Shipbuilding Division of Bethlehem Steel, in Quincy, and lives in Hingham, Mass. Mrs. Baker has collaborated with him in much of his research and will assist him in the work he is now assuming as curator of the Nautical Museum.

John E. Arnold: 1913-1963

A NOTED teacher of mechanical engineering, John E. Arnold, '40, died of a heart attack at the age of 50 in Italy last September 27 while on sabbatical leave from Stanford University.

Professor Arnold was a member of the M.I.T. Faculty from 1942 to 1957, and attracted much attention by posing "science fiction" problems for his students to solve as part of his efforts to stimulate creative thinking. He was also a pioneer in educational television and started the M.I.T. "Science Reporter" series of programs on WGBH-TV that now are televised by 74 stations. Since 1957 he has been director of the design division of Stanford's Department of Engineering.

New Yorkers Open Center

(*Concluded from page 33*)

Theodore A. Mangelsdorf, '26, General Chairman of the center and Executive Vice-president of Texaco, Inc., presided at the brief ceremony and joined President Stratton and Professor Edward L. Bowles, '22, in firing the optical maser that severed a chain as the evening's climax. The exhibition hall on the main floor was filled for the occasion with displays of devices for probing the atmosphere, the seas, and space. Prospective students, parents, and friends of the Institute joined Alumni in inspecting them.

Regular lectures and seminars at the center will cover developments in many different but fast-changing areas of knowledge.

Frank R. Milliken, '34, is deputy chairman of the new center; Henry O. Pattison, Jr., '30, is vice-chairman, activities; Alexander J. Tigges, '23, vice-chairman, administration; David M. Broudy, '22, vice-chairman, counsel; Kenneth W. Nelson, '44, secretary, and Albert F. Clear, Jr., '42, treasurer.

Committee chairmen are Donald G. Fink, '33, membership; Bernard H. Nelson, '35, personnel; Maurice F. Granville, '39, planning; Irving D. Jakobson, '21, program; and George E. Donnelly, '36, publicity and newsletter.

The new center's program, says Alumni Association President Robert H. Winters, '33, may be "the forerunner for other similarly oriented projects" both by M.I.T. Alumni and those of other schools.

SEEING the laser sever a chain are Professor Edward L. Bowles, '22, President Stratton, and T. A. Mangelsdorf, '26, at the New York Center.

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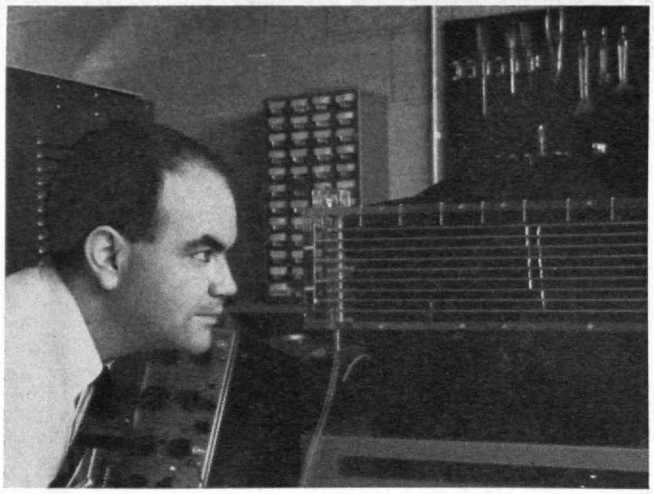
Research Experience

BOTH teachers and physics students responded favorably to an experimental program conducted at M.I.T. in the 1962 spring semester, David H. Douglass, Jr., '59, and Professor Malcom W. P. Strandberg, '48, reported in the September issue of the *American Journal of Physics*.

This program grew out of a conviction held by Dr. Douglass and Professor Strandberg that students often do not know enough about research when they begin their first extensive research efforts. "A student entering the doctorate program," they say, "must know that research is different from scholarship. The difference between creative research and scholarship is as great as that between learning to write a novel and learning to read a novel intelligently." This program was set up to give undergraduates a chance to perform experiments and make experimental measurements under the supervision of scientists engaged in actual research projects.

Sixteen juniors out of 32 applicants were admitted to this experimental program, heard orientation lectures, and completed experiments selected by the faculty. All said afterwards they would unhesitatingly sign up again. If such a program seems overburdensome to a faculty, its sponsors note, "it can be scheduled during the latter part of the college curriculum, when only those students deeply interested in physics will be studying the subject intensively."

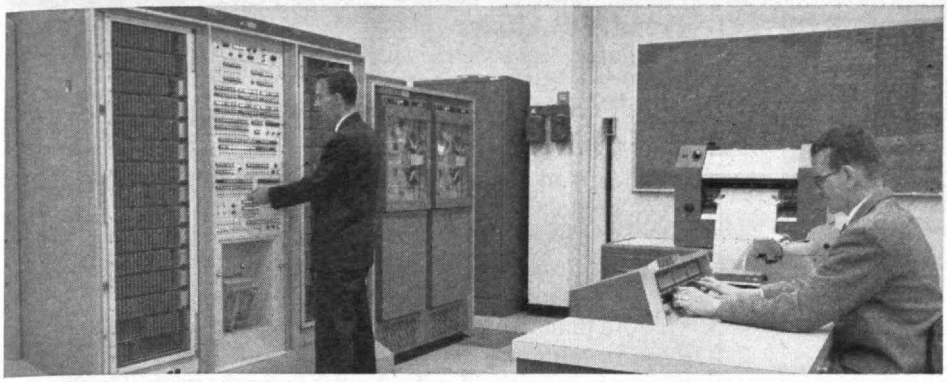


Giovanni Fazio noting mu meson tracks in a spark chamber.

Particle Tracking

THE Smithsonian Astrophysical Observatory reports that Giovanni G. Fazio, '59, hopes to have a spark chamber in the fourth Orbiting Astronomical Observatory when it is sent up by our country in 1967 or 1968. By studying the tracks in it, as reported to earth by TV, he hopes to learn more about the origin and distribution of cosmic rays in the galaxy, and the sources of cosmic rays.

Spark chambers are relatively new instruments, wherein a high-voltage pulse follows the path of least resistance between plates—that path being the ionized trail left by a charged particle. (*Continued on page 56*)



Checkout procedures on a newly manufactured space vehicle—its every component, subsystem and finally, complete system—have until recently been a monumental task. The complete performance of each item was recorded, then either processed and analyzed using entirely manual techniques, or run through computers, translated into digital language, and then manually interpreted and compared with predetermined optimum standards. Two to three weeks often elapsed before final approval could be given.

With the Lockheed-developed AUTO-DRAPE system—Automatic Data Recording and Processing Equipment—checkout time has been cut to a few days. The key to this time and labor saving system is simple: A "filter" device has been installed between the checkout signal and the analyst. AUTO-DRAPE thus produces an "exception" report—a printed tabulation of vehicle functions not performing within preassigned limits. This advanced technique—which makes use of a real time, on-line digital computer—eliminates the need to manually examine some 80% of the data.

With this system, engineers at Lockheed Missiles & Space Company are now able to process data at the amazing rate of *40 Kc in real time.* Based on these principles, Lockheed is also operating the VADE system, currently performing launch readiness functions at the Pacific Missile Range. A further extension of this concept is being developed to process the telemetered signals of a vehicle in flight.

LOOK AT LOCKHEED... AS A CAREER. Consider Lockheed's leadership in space technology. Evaluate its accomplishments—such as the Polaris missile and the Agena vehicle's superb performance records. Examine its outstanding advantages—location, advancement policies, creative climate, opportunity for recognition.

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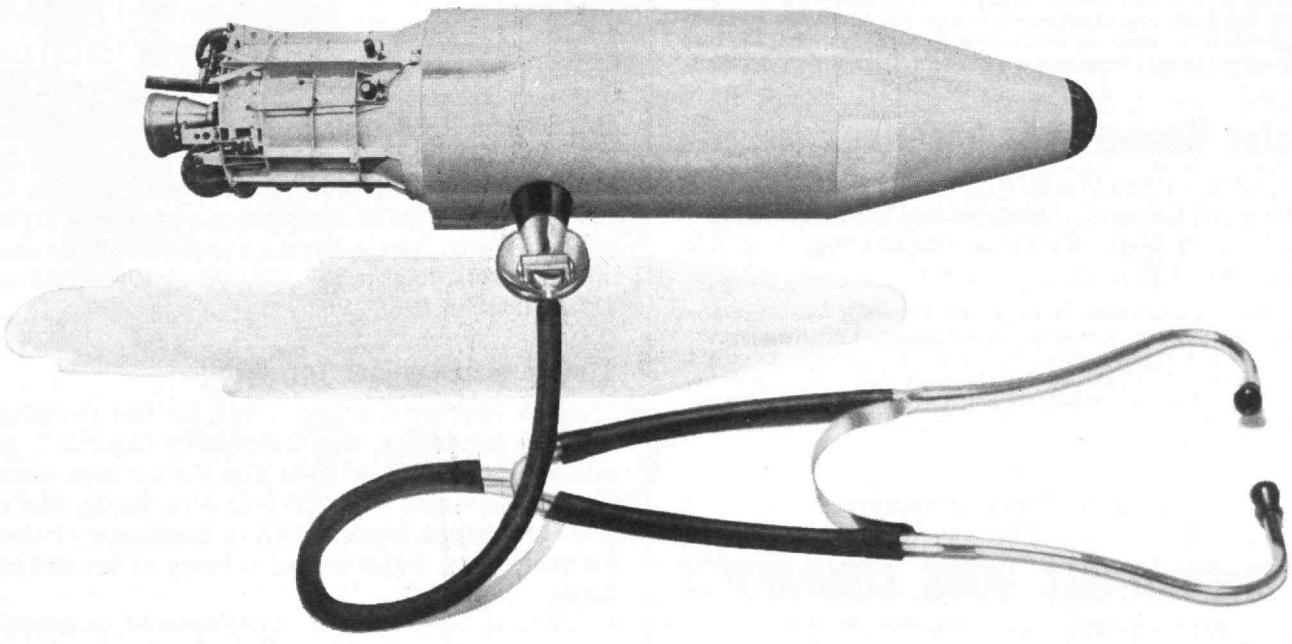
LOOK AT LOCKHEED... IN AUTOMATIC CHECKOUT

Reducing data reduction



Trend of Affairs

(*Continued from page 54*)

The Treasurer's Report

THE ANNUAL REPORT of Joseph J. Snyder, '44, Vice-president and Treasurer of M.I.T., showed that invested funds and plant of the Institute at the close of the fiscal year 1963 were $207,000,000, as compared with $183,000,000, at the end of the previous year, $132,000,000 five years ago, and $93,000,000 ten years ago.

More than two-thirds of the gifts related to the Second Century Fund had been received by last June 30, in the form of securities, cash, or other properties. Thanks largely to this fund, gifts and bequests received during the five years 1959 through 1963 were $77,000,000, compared with $39,000,000 during the five years ended in 1958, and $31,000,000 during the period 1949 through 1953.

Endowment and other funds increased by $15,133,000 during 1962-1963, and the educational plant increased from $51,856,000 to $59,334,000 due primarily to construction progress on the earth sciences building, the women's residence, and the married student housing project on the West Campus.

The Institute's operations in educational and general activities in 1962-1963 and in 1961-1962 were summarized as follows:

Revenues and Funds	*1962-63*	*1961-62*
Tuition and other income	$10,726,000	$ 9,246,000
Endowment investment income	2,014,000	1,887,000
Gifts, investment income, and other receipts	6,592,000	6,957,000
Allowances for indirect expenses	12,224,000	10,847,000
Dining and student housing	2,201,000	2,096,000
Total	$33,757,000	$31,033,000
Expenses		
Academic departments	$13,016,000	$11,876,000
General and administration	13,599,000	12,648,000
Plant operations	4,941,000	4,413,000
Dining and student housing	2,201,000	2,096,000
Total	$33,757,000	$31,033,000

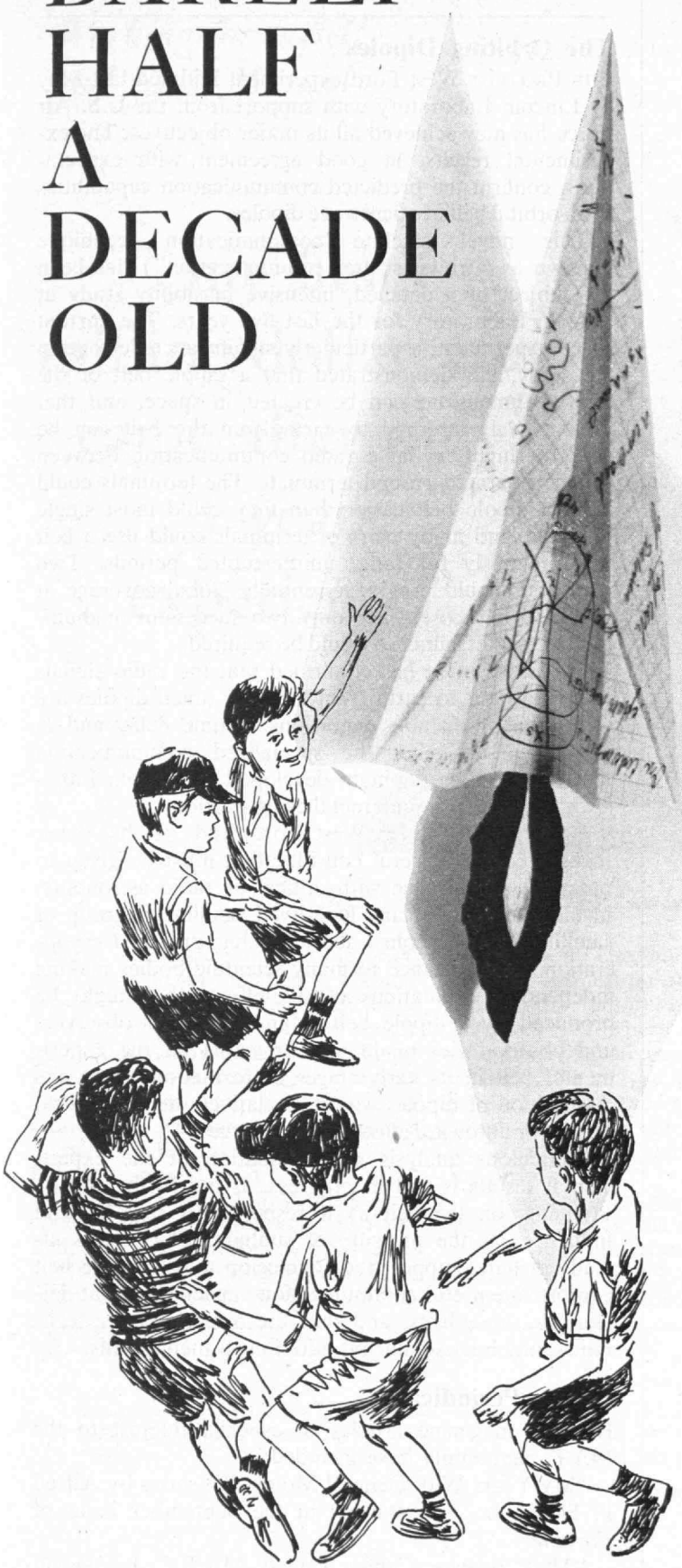
Direct expenses of general departmental and interdepartmental sponsored research, met in the same amount with revenues from sponsors, were $25,014,000 in 1962-1963 and $19,440,000 the preceding year. Direct expenses of major laboratories and special departmental research, met in the same amount with revenues from sponsors, totaled $72,558,000 in 1962-1963 and $57,480,000 in 1961-1962.

The New Residence for Women

STANLEY MCCORMICK HALL, M.I.T.'s first permanent residence for women, was dedicated on October 7, and will be described in detail in The Review next month. The new dormitory was a gift from Mrs. Stanley McCormick (Katharine Dexter, '04), a benefactor of coeds for many years, and is named in honor of her late husband.

(*Continued on page 58*)

BARELY HALF A DECADE OLD



The Space Age is barely half a decade old, yet our memory of its beginning has already begun to fade. In the flush of our recent successes in space — including the orbital flights of Glenn, Carpenter, Schirra and Cooper — it is easy to forget the loss of national prestige when, in late 1957, our first attempt to match the success of the Soviet SPUTNIK I, ended so ingloriously with the failure of VANGUARD at Cape Canaveral.

Predictably, our response to SPUTNIK I was a combination of frustration and determination. Fortunately, we had ballistic missiles — THOR and ATLAS — which could be used as space boosters to launch small payloads. This put us into the Space Race.

The fact that we had any space hardware at all was due largely to the role of TRW's Space Technology Laboratories in the Air Force Missile Programs. In 1954, when the U.S. learned that the Soviets were developing long range ballistic missiles, a group of eminent scientists and engineers was assembled to assist the Air Force in bringing a weapon system into being. This organization was the forerunner of today's Space Technology Laboratories. STL performed its duties in a climate of extreme urgency and within the short span of three years — 1954 to 1957 — production line missiles were ready for the Air Force.

As the nation's first industrial firm devoted exclusively to missile and space technology, STL grew with the national space effort. Since 1957, STL has participated in nearly every manned and unmanned space probe. Today, over 2,000 engineers and scientists and 4,000 support personnel combine their talents on many STL projects ranging from research to building spacecraft for NASA's Orbiting Geophysical Observatory (OGO) Program and for the Air Force 823 Program, designing Pioneer spacecraft for NASA, developing special engines for LEM and other spacecraft, and continuing Systems Management for the Air Force's ATLAS, TITAN and MINUTEMAN Programs.

STL's many activities create immediate openings for engineers and scientists with experience in Theoretical Physics, Systems Engineering, Radar Systems, Experimental Physics, Applied Mathematics, Space Communications, Space Physics, Antennas and Microwaves, Inertial Guidance, Analog Computers, Solid State Physics, Computer Design, Telecommunications, Digital Computers, Guidance and Navigation, Electromechanical Devices, Engineering Mechanics, Applied Aerodynamics and Propulsion Systems. For information about STL positions in Southern California, write Professional Placement, Department CD, One Space Park, Redondo Beach, California. STL is an equal opportunity employer.

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Trend of Affairs

(Continued from page 56)

The Orbiting Dipoles

THE PROJECT West Ford experiment initiated last May by Lincoln Laboratory with support from the U.S. Air Force has now achieved all its major objectives. The experimental results, in good agreement with expectations, confirm the predicted communication capabilities of an orbital belt of microwave dipoles.

This novel satellite communication technique (known as "orbital scatter communication") has been the subject of a detailed, intensive feasibility study at Lincoln Laboratory for the last five years. The current space experiment, a particularly significant milestone in the study, has demonstrated that a dipole belt of the desired dimensions can be created in space, and that radio signals returned to earth from the belt can be used for highly reliable radio communication between widely separated ground terminals. The terminals could track a dipole belt easier than they could most single satellites, and many pairs of terminals could use a belt simultaneously for long, uninterrupted periods. Two such belts could provide essentially global coverage at relatively low cost, since only two successful medium-altitude rocket launches would be required.

The experiment has confirmed that the radio signals scattered back to earth from the tiny, tuned dipoles are subject to predictable distortions in time delay and in frequency, and that the specialized communication techniques and equipment developed at Lincoln Laboratory effectively counteract these distortions.

Throughout Project West Ford study, it has been recognized that careful consideration must be given to potential interference with optical or radio astronomy, in the launching of any long-lived satellite or group of satellites, and Lincoln Laboratory has provided co-operation and assistance to many scientific bodies making independent evaluations of side-effects that might be produced by a dipole belt. Many volunteer observers and observatories made measurements on the experimental belt in its early stages of formation, when the distribution of dipoles was still relatively dense, and no serious or untoward effects were observed.

Meticulous analysis and evaluation of the experimental results is still in progress, as are further measurements on the belt as it responds to such natural influences as the pressure of sunlight. The results already in hand support the conclusion that a dipole belt can provide useful communication capacity without deleterious side-effects, and that the orbital scatter technique may be a significant addition to men's skills.

In the Periodicals

RECENT magazine articles of especial interest to the M.I.T. community have included:

"My Years With General Motors," a series by Alfred P. Sloan, Jr., '95, starting in the September issue of *Fortune*.

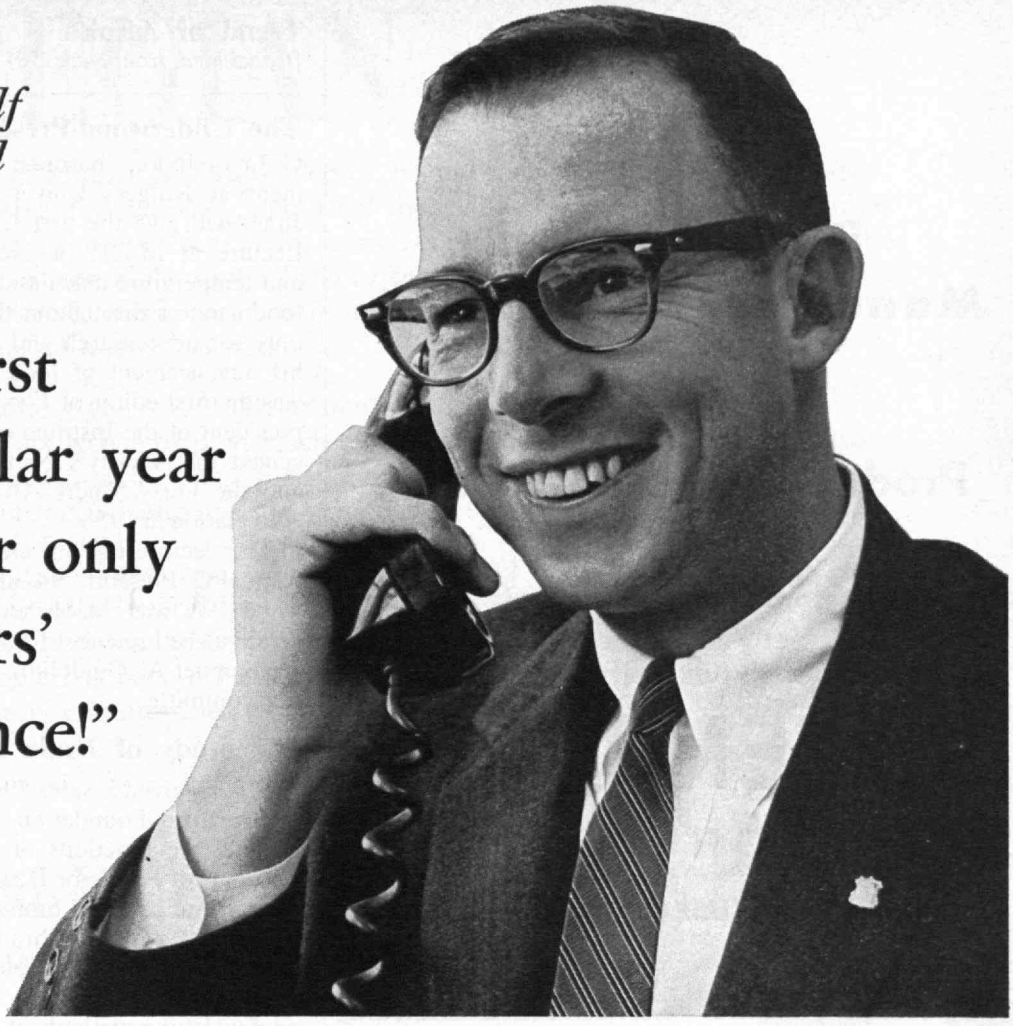
"That Science Center Called M.I.T.," by David Boroff, in The New York *Times Magazine*, August 18.

"Mexico's M.I.T.," by Petra Duffett, *The Saturday Review*, August 17.

(Concluded on page 60)

"Working for myself and Mass Mutual

my first million-dollar year came after only 3 years' experience!"



says John E. (Buddy) Leake, Jr., Memphis, Tenn.

"Three years after graduating from the University of Oklahoma, I found myself in the top quarter of my field.

"In that year, 1959, I sold nearly *two* million dollars of insurance. Every year since then has been a highly successful year for me. When I graduated I had gone into business for myself as a life insurance agent with Massachusetts Mutual.

"I can't think of any other field where a man can progress so rapidly. Believe me, I'm in for the long haul!

"It occurs to me that there must be many men who are tired of working for somebody else, and would like to get into business for themselves. In a business that requires no investment or inventory ... where you select the type of people you want to do business with ... where you profit in direct proportion to your own efforts ... and where you have the satisfaction of knowing that your work is really helping people.

"It seems to me that men like this should investigate the opportunities of selling life insurance with Mass Mutual. It is a fine company with over 2.6 billion dollars in assets. It is solid, yet progressive. It offers me a career with a wonderful income and with plenty of time for Carolyn and our five children.

"If you're interested in a career like mine, the President of Massachusetts Mutual would like you to write him a personal letter about yourself. This could be one of the smartest things you have ever done! His name is Charles H. Schaaff, and you can write to him at the home office in Springfield, Massachusetts.

"There's always room for good men at Mass Mutual. How good are you?"

Some of the Eastern Group Alumni in the Massachusetts Mutual Service:

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Harold G. Ingraham, Jr., C.L.U., '49, Home Office

LEHIGH

Russell E. Hoaster, C.L.U., '31, San Antonio
Edward Billstein, Jr., '40, Atlanta
R. Lester Dodson, Jr., '44, New York

LAFAYETTE

David B. Adler, C.L.U., '17, Orlando
Frederic F. Lawall, '22, New York
David K. Aldrich, C.L.U., '38, Allentown
Frank W. Hiller, '43, Philadelphia
Richard A. Faust, '56, Binghamton
Aman M. Barber, Jr., '59, Allentown
Cameron D. Warner, '61, Bethlehem

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Trend of Affairs

(Concluded from page 58)

The Underwood-Prescott Lecture

C. OLIN BALL, chairman of the Food Science Department at Rutgers University until his retirement last June, will give the first Underwood-Prescott Memorial Lecture at M.I.T. on November 18. Dr. Ball's time and temperature calculations in the 1920's have guided food canners throughout the world, and he is noted not only for his research and 29 U.S. patents, but also for his advancement of food science as a profession. He was the first editor of *Food Technology* and is currently president of the Institute of Food Technologists. He received this society's Nicholas Appert Medal in 1947 and the Forty-Niners Award of the National Canners Association in 1958.

The lectureship in memory of the late Professor Samuel C. Prescott, '94, and the late William L. Underwood, '98, was established last spring, and will bring a distinguished scientist to the Institute each year. Professor Samuel A. Goldblith, '40, is chairman of the selection committee.

For Study of Brain Injuries

M.I.T. received a $290,796 grant this fall from the John A. Hartford Foundation, Inc., to support research regarding the functions of the human brain, under the direction of Professor Hans-Lukas Teuber. A three-year program of study of brain injury in adults and exploration of the effects of brain damage in children will be carried out in the Psychology Section's Research Building at 79 Amherst Street, Cambridge. Stress will be laid on developing methods of measuring sensory and motor functions after injuries to the nervous system, whether sustained early or late in life, and on detecting factors which hasten or retard recovery, as well as those which promote or prevent the onset of epilepsy.

Eastman Kodak Grants

M.I.T. received $47,100 in grants from the Eastman Kodak Company this year, including an unrestricted direct grant, based on the number of Alumni who joined Kodak five years ago and are presently employed by the company. Fifty-three privately supported colleges and universities were aided in this way this year by Kodak, and its contributions to education totaled about $1,200,000.

COLLEGIAN

He's a student at General Motors Institute. Today, he's absorbed in higher mathematics. Tomorrow, perhaps Plato and Aristotle . . . political theory and psychology . . . humanities and economics—in short, whatever makes for a well-rounded education. Next week, he may be on the job in an automobile plant. Twenty-four hundred other students like him are studying to be electrical, mechanical or industrial engineers, in one of the world's most unusual institutions of higher learning.

During their first four college years at GMI, students alternate between six weeks of intensive study at GMI and six weeks of paid work at one of 133 General Motors operations across the nation and in Canada. Their fifth year is entirely in the field . . . preparing bachelor theses based on actual engineering projects of their sponsoring GM divisions.

Since its small beginning, 37 years ago, GMI has graduated 6,000 engineers. The great majority chose to remain with General Motors and today are employed in a wide range of technical and managerial positions in GM plants throughout the world. The educational investment in these people has been a beneficial one—not only for them and for General Motors—but for the many communities where they now work and live.

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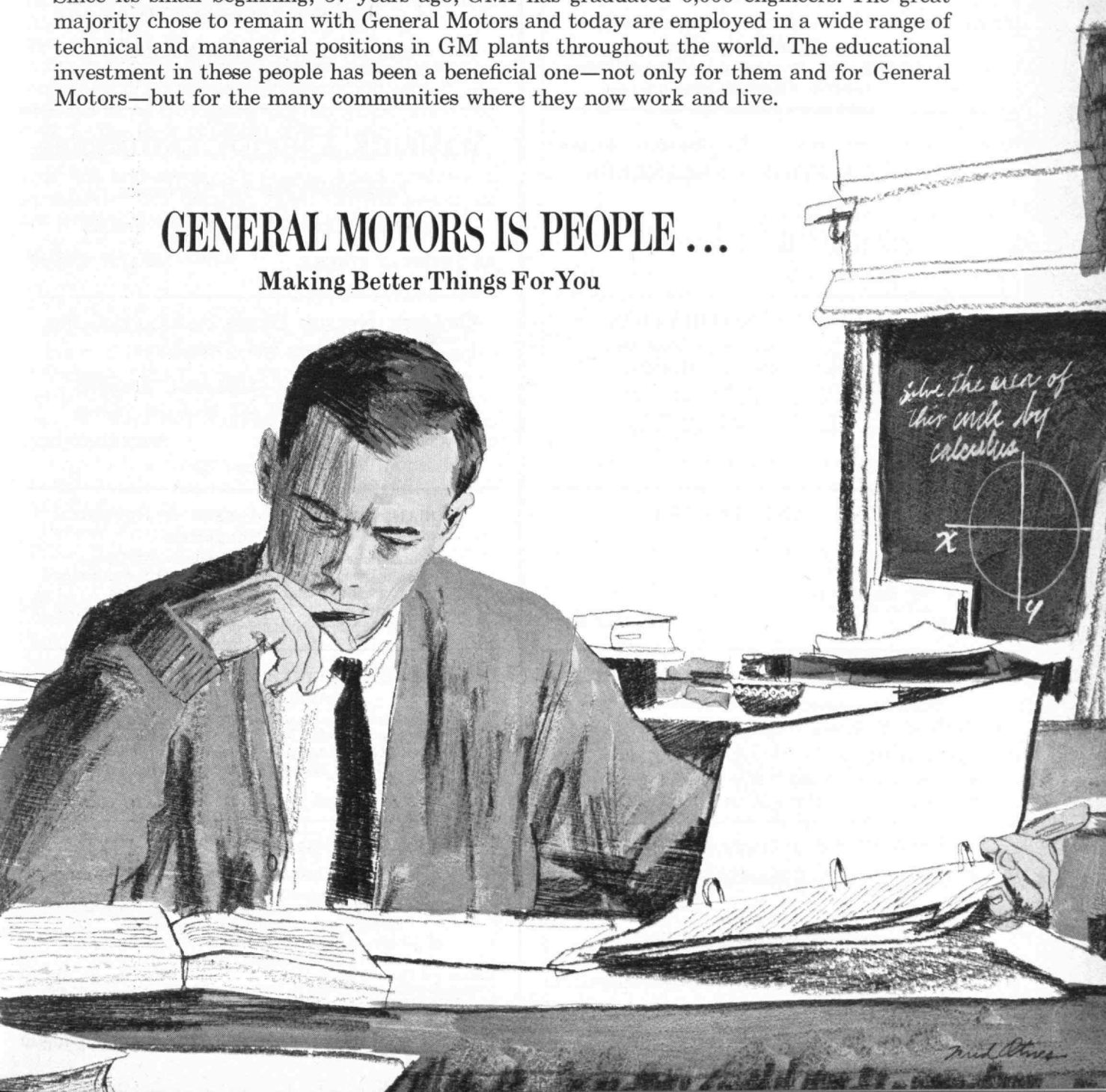

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New Books

MATHEMATICS FOR SCIENCE AND ENGINEERING, by Philip L. Alger, '15 (McGraw-Hill Book Company, paperback, $2.95).

Reviewed by Philip Franklin, Professor of Mathematics.

PROFESSOR ALGER, '15, who spent much of his career at General Electric Company, has produced an excellent short text on the mathematics of elementary electrical engineering, from trigonometry through probability, differential equations, and circuits. The treatment is designed to serve either as a review for the college-trained engineer, or as an introduction to advanced material for the technician with only a high school background.

The book is based on the earlier work, *Engineering Mathematics,* by Charles P. Steinmetz. It maintains the emphasis on usable mathematics and simple exposition. Even in the early chapters, several topics have been added and numerous references for further reading are given with each chapter. This up-dated treatment should prove useful as a reference work, refresher course, or text for the material it covers.

Mainly for Specialists

RECENT PUBLICATIONS of particular interest to some M.I.T. Alumni have included:

The Communist Foreign Trade System, by Frederic L. Pryor of the Center for Russian Studies, University of Michigan (M.I.T. Press, $7.50).

Handbook of Industrial Textiles, by Ernest R. Kaswell, '39 (Wellington Sears Company, Inc., Publications Department, $15).

Impact Phenomena in Textiles, by W. James Lyons of the Textile Research Institute, Princeton, N.J. (M.I.T. Press, $5).

Infrared Physics and Engineering, by Raymond H. McFee, '37, and others (McGraw-Hill Book Co., $19).

Introduction to the Utilization of Solar Energy, edited by A. M. Zarem, with contributions by George D. Lukes, '39, Frederick A. Brooks, '20, Albert G. H. Dietz, '32, Hoyt C. Hottel, '24, George O. G. Lof, '40, Everett D. Howe, '27, and others (McGraw-Hill Book Company, Inc., $13.50).

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Club News

Washington M.I.T. Club To Hear NASA Men

The M.I.T. Club of Washington will hold its first dinner meeting on Wednesday, November 20, at the Cosmos Club. Gilbert H. Lewis, '51, is chairman. Dr. Raymond L. Bisplinghoff, Director of Advanced Research and Technology, National Aeronautics and Space Administration, the scheduled speaker, is responsible for planning NASA activities after Apollo and Gemini, including exploratory missions to Mars, Venus, and beyond.

John J. Phillips, Jr., '38, and Stanley M. Smolensky, '41, are organizing a NASA luncheon group for Alumni in the vicinity. The group will meet monthly and hear informal talks by prominent NASA men. John, who first worked for NASA in Huntsville, Ala., organized the successful Pentagon Luncheon Group which has been meeting regularly for three years.

The Pentagon Luncheon Group, headed by Lieutenant Colonel James R. Comberpatch, '60, will resume its monthly meetings in October, at which time officers will be elected.

The eighth annual Christmas vacation luncheon for Alumni, undergraduates, and local prospective M.I.T. applicants has been planned for December 27 at the Cosmos Club. Robert W. Blake, '41, is chairman. Past President Captain Sterling H. Ivision, Jr., '41, has completed the annual beer party plans. It is to be October 1, 1963, at Hammels Restaurant, and Devron and his accordion will provide the music. A movie on Gemini program also will be shown.

Eleven executive members, with President Paul M. Robinson, Jr., '44, presiding, met on August 14, at Blackie's House of Beef to approve this year's program, which will include dinner meetings on January 28, March 12, and April 29, at the Cosmos Club. Treasurer Seldon W. Saunders, '57, announced there were 234 paid club memberships last year.—Richard R. Martin, '45, Secretary, 9308 Milroy Place, Bethesda 14, Md.

Northeast Pennsylvanians Attend Ladies' Night

The M.I.T. Club of Northeastern Pennsylvania held its annual summer Ladies' Night dinner meeting on August 9 at the Irem Temple Country Club in Dallas, Pa. It was preceded by a cocktail hour at the home of Gustav A. Kabeschat, '55, Club President. Guests included: Mr. and Mrs. William L. Dennen, '17; Mr. and Mrs. Louis V. Russoniello, '40; Mr. and Mrs. Leonard E. Pawlowski, '40, Mr. and Mrs. Paul C. Isenberg, '47; Mr. and Mrs. Benjamin G. Dann, Jr., '48; Mr. and Mrs. Charles P. Hadley, '50; and Mr. and Mrs. Stanford B. Jones.—Stanford B. Jones, '51, Secretary, R.D. #1, Dalton, Pa.

Future M.I.T. Club Meetings

Following are the dates and principal speakers as announced at the time of printing for M.I.T. club meetings during November and December, 1963. For more details consult the club secretary in your city.

November 14—Boston—Professor Jerrold R. Zacharias
Secretary: John M. Reed, '51, 73 Tremont Street, Boston

November 26—St. Louis—Program to be Announced
Secretary: Paul A. Lux, '52, 15 Enfield, St. Louis, Mo.

December 12—Boston—Representative of NASA
Secretary: John M. Reed, '51, 73 Tremont Street, Boston

Additions to this column of meeting announcements are welcome. Copy is due November 21 for the January issue of The Technology Review and should list your club meetings for January and February. Send your copy to: Alumni Secretary, M.I.T. Alumni Association, Room 1-280, Cambridge 39, Mass.

Atlanta M.I.T. Alumni Enjoy Summer Cook-Out

The Atlanta Alumni Association of the M.I.T. held a cook-out steak dinner on May 25 at the home of William T. Shuler, '38, Club Secretary, in suburban Atlanta. Steaks and filets were cooked by the members over a battery of charcoal broilers and the rest of the delicious dinner was prepared by Mrs. Shuler and Mrs. Fred N. Dickerman. The weather was mild and a succession of Tiki torches ringing the area kept the bugs away.

Later the group withdrew indoors to see a movie, "Invitation to Georgia—R.S.-V.P.," prepared by the Lockheed-Georgia Company and presenting the attractions and outstanding features of the Peach State. D. Hugh Darden, Director of the Educational Council, gave an informal talk on Tech and pointed out that more effort now is made to provide a warm, friendly, and encouraging environment for the new student, and give students a better grounding in the arts and humanities.

Fred N. Dickerman, '30, who has been president for the last five years, presided at the election of new officers. Bill Shuler was asked to be secretary for another year, and the following new officers were elected: Clarence P. Moore, 3d, '48, President; and Directors, William F. Spreen, Jr., '34, and Elmer E. Sanborn, '22. The officers and Fred Dickerman, as local chairman of the Educational Council, will also serve as directors of the board.

The following attended: Mr. and Mrs. Dickerman, Mr. and Mrs. Shuler, William E. Huger, '22, Mr. and Mrs. Robert Oppenlander, Jr., '44, Mr. and Mrs. Sanborn, Mr. and Mrs. Spreen, Mr. and Mrs. Earl E. Blount, '28, Mr. and Mrs. Charles H. Hurkamp, Jr., '27, Mr. and Mrs. Marion C. Manderson, '53, Mr. and Mrs. E. Putnam Head, '37, Mr. and Mrs. Roger W. Allen, '27, Mr. and Mrs. Dimitrios A. Polychrone, '47, Mr. and Mrs. Vincent C. Frisby, '33, and Mr. and Mrs. John P. Tillinghast, '31.—William T. Shuler, '38, Secretary, 4423 Mt. Paran Parkway, N.W., Atlanta, Ga.

Central Pennsylvanians Hear Mining Expert

The M.I.T. Club of Central Pennsylvania held a wind-up meeting for 1962-1963 at the Lincoln Woods Inn in East York, Pa., on June 21. Dr. H. B. Charmbury, Pennsylvania State Secretary for Mines and Mineral Industries, explained his department's functions and described the problems the State government faces in dealing with strip or bituminous mining, anthracite or deep pit mining, and the abandoned and presently unworked mines which pose a threat to nearby communities. Mrs. Charmbury was among the wives and guests present.

The following Alumni have recently moved into the Central Pennsylvania area or have changed their addresses: Gerard V. Patrick, '28, Borg-Warner Corporation, York Division, Grantley Road, York, Pa.; Henry W. Newell, '27, Holly Drive, Ironville R. D. #1, Columbia, Pa.; John S. Auer, Jr., '62, 218 Meadia Avenue, Lancaster Pa.; Mrs. Dorothy G. Levinson, '57, 118 North 33rd Street, Camp Hill, Pa.; Stephen J. Yeretsky, '59, 430 North Adams Street, Hinsdale, Ill.; and Donald T. King, '59, 2491 Marchese Way, Santa Clara, Calif. —Robert K. Peterson, '48, 566 Brentwater Road, Camp Hill, Pa.

Northern California Officers Meet with M.I.T. Freshmen

Officers of the M.I.T. Club of Northern California met with the incoming freshmen and San Francisco Bay area M.I.T. students on August 30. Paul M. Cook, '47, was host at his Atherton home. An outdoor buffet supper was served in beautiful tree-studded surroundings.

William R. Brody, '65, led a stimulating discussion of life at M.I.T., and the freshmen appeared to have resolved a great many questions about the Institute. William D. McGuigan, '42, co-ordinated the meeting plans.—Roger S. Borovoy, '56, Secretary-Treasurer, Lippincott, Ralls & Hendrickson, 535 Middlefield Road, Palo Alto, Calif.

Southern California Club Entertains M.I.T. Students

The M.I.T. Club of Southern California has been active during the past summer—in addition to two meetings, it sponsored a get-together for all newly admitted students and present undergraduates who are residing in the area. The annual party was held at the home of Robert Welles, '15, in Altadena, and 75 students, club officers, Educational Counsellors, and guests attended. Following a buffet supper outdoors, the students had a private get-together under the direction of Page Golsan, '12.

Those who attended the meeting are pictured below:

First row—Frederick H. Kuttner, '67, Varon B. Mullis, '67, James E. Evans, '63, Richard M. Harris, '63, Michael J. Monsler, '64, Richard W. Spehn, '67, William A. Parkyn, Jr., '66, Richard Lowensohn, '65, Edward F. Schuman, Jr., '57, Thomas R. Schmidt, '66, Theta T. Tsu, '67, Arthur Schwartz, '47;

Second row—Robert Welles, '15, Mrs. Welles, Samuel E. Lunden, '21, D. Tsu, Mrs. Antonia D. Schuman, '58, Diana M. Leighninger, '67, Albert A. Levingston, '49, Page E. Golson, Jr., '34, Robert E. Hiller, '31, George M. Cunningham, '27, Philip K. Bates, '24, Albert C. Walker, '18, Martin R. Chetron, '56;

Third row—William B. Vail, 3d, '67, Clarence W. Hunsucker, '66, David K. Maxwell, '66, Gary S. Schwartz, '67, Desmond R. Booth, '67, William L. Caton, 3d, '67, Kevin J. Sullivan, '67, Richard A. Graff, '66, Louis G. Johnson, '67, Marvin A. Sirbu, Jr., '66, Alan M. Steinman, '66, Theodore R. Harris, '66, Stephen J. Braunstein, '67, Stephen E. Weiss, '67, Robert L. Post, Jr., '67, William B. Hawe, '52;

Fourth row—Harold H. Strauss, '38, Thomas L. Percer, '66, Robert J. Cantwell, '50, James C. Sandusky, '67, Donald L. Paul, '67, Karl A. Achterkirchen, '64, Edward R. Fiala, '66, R. Post, '67, Robert T. Menzies, '65, Henry A. Lichstein, '65, Erwin Strauss, '65, David A. Fahrland, '64, Frank A. Yett, '40;

Fifth row—Thomas E. Roddick, '67, Peter D. Wolfe, '66, Charles L. Whitman, '62, Steven A. Bearman, '67, David J. Abeshouse, '62, George N. Stiny, '67, Terry R. May, '66, Gary L. Sawyer, '67, S. Lin, '67, Charles M. Walker, '49, and Richard S. DeWolfe, '36.

Those not pictured are: Stanley R. Pliska '65, Edward M. Graham, '64, R. Wysenbach, '65, Francis O. Merchant, '33, Hiram E. Beebe, '10, Gates W. Burrows, '25, Tiina Repnau, '64, T. C. Jones, '66, and Alan E. Kruse, '67.

The Club held a smoker last summer at the Institute of Aeronautical Sciences, next door to CBS Television City. Samuel E. Lunden, '21, showed slides and described his recent trip to Europe. About 50 Alumni and guests attended.

A highlight of the summer was a dinner and plant tour at the Los Angeles facility of the Annheuser-Busch Company. The program, arranged by George M. Cunningham, '27, included a slide presentation regarding the Busch Gardens, which are presently under construction adjacent to the brewery property. John Flanigan, '44, was narrator. Over 150 attended.—Arthur Schwartz, '47, Secretary, 8355 Blackburn Avenue, Los Angeles 48, Calif.

Oregon M.I.T. Club Tours Paper Mill

The M.I.T. Club of Oregon held its annual dinner meeting on May 28 at the West Linn Inn of West Linn, Ore. Members and guests were then divided into groups of eight or 10 for a tour through the Crown-Zellerbach Corporation Pulp and Paper Mill, one of Oregon's oldest industrial plants. New officers were nominated.—Mrs. R. Elaine E. Spencer, '48, Secretary-Treasurer, 4835 N.E. Broadway, Portland 13, Ore.

New Mexico Alumni Visit Gila Mountains

The M.I.T. Club of New Mexico held its annual spring weekend on May 18-19 at the Los Olmos Guest Ranch in Glenwood, high in the Gila Mountains of southwestern New Mexico. After a get-acquainted luncheon on Saturday afternoon, some members visited once-active mining locations which are now ghost towns. Others fished in nearby streams, hiked up the Box Canyon of Whitewater Creek and viewed the catwalk over the rushing waters of the stream, indulged in horseback riding, or "siesta-ed" in the pleasant sun. An outdoor barbeque was served that evening. Hugh McMahan, our ranch host, told about his early memories of the area when it was the scene of bustling mining activity. His brother, only five years older, well remembers an Indian raid in the vicinity.

Alfred M. Perkins, '23, assisted by his wife, Ruth, exhibited many hand-carved representations of military figures. Costumes and colors, the result of much painstaking research, were authentic.

Sunday's activities were much the same as those on Saturday, and we returned home impressed anew with the scenery and climate of our native state.

Members and wives attending included: Mr. and Mrs. Frederic C. Alexander, Jr., '32; Mr. and Mrs. Will W. Boyer, '20; Mr. and Mrs. George H. Bradley, Jr., '49; Mr. and Mrs. Billy C. Caskey, '56, and their two children; Mr. and Mrs. Thomas N. K. Godfrey, '50, and daughter; Mr. and Mrs. Julian E. Gross, '50, and their three children; Mr. and Mrs. David L. Hanson, '56, and their child; Mr. and Mrs. Perkins, '23; Mr. and Mrs. Benjamin F. Powell, '23; Robert E. Quinlan, '30; Mr. and Mrs. Thomas J. Raftery, '31; and Mr. and Mrs. Leslie M. Redman, '47, and their child.—Thomas J. Raftery, '31, Secretary, 1505 Valencia Drive, N.E., N.M.

Southern California Alumni and undergraduates met last summer, as shown here, at the home of Robert Welles, '15.

Cleveland Association Elects 1963-1964 Officers

More than 50 Alumni and their wives attended the annual M.I.T. Association of Cleveland Ladies' Night on May 16. Cocktails and dinner at the Wade Park Manor were followed by a visit to the newly opened Mueller Planetarium of the Museum of Natural History.

Officers elected for 1963-1964 were: Stanley M. Proctor '43, President; Robert J. Fay, '42, Executive Vice-president; Walter A. Rajki, '51, Secretary; Richard G. Wilson, '54, Assistant Secretary; Robert B. Dirks, '57, Treasurer; Bruce A. Lamberton, '44, Assistant Treasurer; and Executive Committee members: Jay P. AuWerter, '38, Heath Oliver, '55, Richard E. Hare, '51, James A. St. Louis, '28, Donald D. Scarff, '41, and S. Floyd Stewart, '24.

Stanley Proctor, '43, and Robert Fay were to be hosts on September 10 at an informal gathering for 22 freshmen entering M.I.T. this fall from greater Cleveland.—Walter A. Rajki, '51, Secretary, 14300 Lorain Avenue, Cleveland 11, Ohio.

Oklahoma Alumni Hear Mrs. K. T. Compton

Mrs. Karl T. Compton spoke at a dinner held on May 8 at the Tulsa YWCA, and was honored at a reception in the Founders Room at the Mayo Hotel. William J. Sherry, '21, was host to 24 members and wives from Tulsa and Oklahoma City. This was an opportunity for Mrs. Compton, who served in the Tulsa YWCA during World War I, to renew old acquaintances with Tulsans as well as M.I.T. Alumni.

Oklahoma Alumni honored President Julius A. Stratton, '23, on May 26 at an informal reception and tea at the home of Mr. and Mrs. Charles B. Stuart, '34, of Nichols Hills, Okla. Dr. Stratton was in the area for commencement activities of Oklahoma City University.—Bruce Kirton, '44, Secretary, 5317 E. 28th Street, Tulsa, Okla.

Delaware Valley Club Attends Clambake

The M.I.T. Club of Delaware Valley held a clambake and chicken barbeque on July 20 at the home of Mr. and Mrs. Wiley F. Corl, '39, in Gladwynne Pa. Sixty-eight members and guests attended. Besides the excellent food there was swimming, soft ball, and eclipse-watching.—John B. Murdock, '41, Secretary, 15 Runnemede Avenue, Lansdowne, Pa.

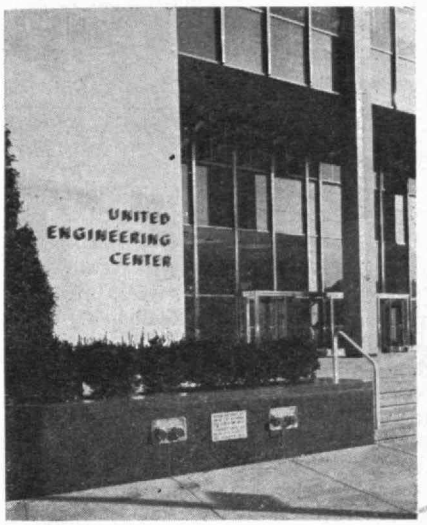
West Suburban Club Elects Grinker to Presidency

New officers elected by the West Suburban M.I.T. Club are: William S. Grinker, '56, President; Benjamin Kessel, '48, and Harvey J. Humphrey, '49, Vice-presidents; Harold Jacobson, '46, Treasurer; George H. R. McQueen, '49, Past President.—Roland H. Eaton, '17, Secretary, 24 Church Street, Sudbury, Mass.

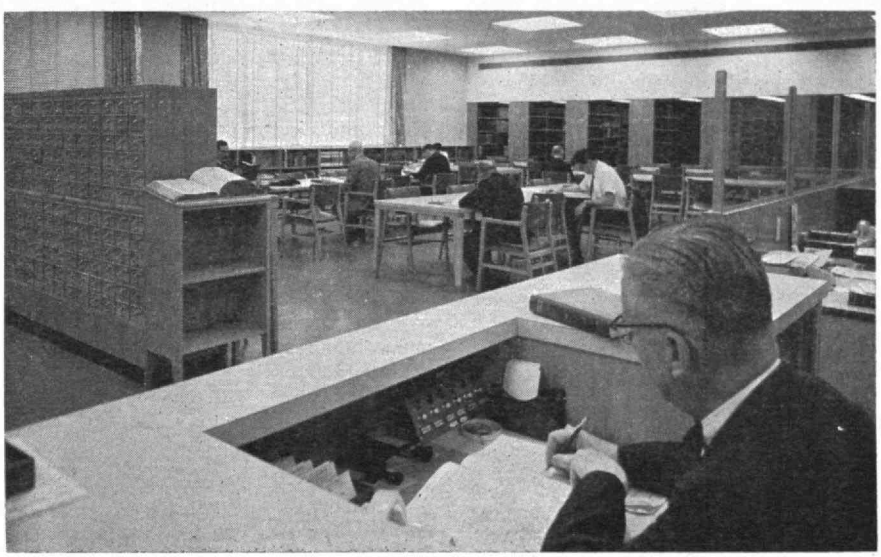
The New Center for M.I.T. Men in New York

MEMBERS of the newly established M.I.T. Alumni Center of New York will have access to the unique facilities of the United Engineering Center, a new skyscraper overlooking the United Nations Plaza, at 345 East Forty-seventh Street. The main auditorium seats 434 and can be partitioned into three rooms. The library accommodates 81 persons, and has 180,000 volumes, 27,000 maps, 10,000 indexed bibliographies, and thousands of technical papers and periodicals.

The center was officially opened September 26, with ceremonies that are reported on Page 33 of this issue of The Review.



Lounges, meeting and dining rooms, and a 6,234-square-foot exhibition hall on the main floor are easily reached from most parts of midtown New York.



The United Engineering Center has New York's largest library of its type. It receives 3,400 periodicals and other publications from 45 countries.

Class News

'91

"Dear Channing. You may be interested to know that Pomeroy W. Powers, '85 S.M.A., will be 100 years old this year and is next to the oldest living G.E. pensioner. He was at the head of the drafting department here in Pittsfield when he retired in 1932. . . . I have had to cut my bicycle riding down to an average of not more than four miles a day and find it hard to keep balanced when the wind is blowing. I get out every day and keep busy with Golden Age and Senior Citizen activities, candlepin bowling, some Boy Scout work, etc. Find my mind badly slowed up. How are YOU getting along? Sincerely, Arthur." The above note is from **Arthur W. Pierce,** '91, bicycle rider and Boy Scout leader in Western Massachusetts. The Pittsfield Rotary Club has honored him, and the Berkshire Eagle runs columns of news about him. He is well-beloved by members of our class, and we send him congratulations and our very best wishes—dear Arthur.

The passing of **John Linfield Damon** from this planet on July 7, 1963, was a real loss to hosts of us to whom Lin Damon had become almost an institution of dignity and wisdom. He had a deep personal interest in every member of the class. His kindness, sympathy and good cheer and his devotion to all the good works of Technology were an inspiration for us all. The following notice of his passing appeared in the Boston Herald: "John L. Damon, 94, of 295 Kent Street, Brookline, retired hotel management consultant, died yesterday (July 7). He was former owner and manager of the Thorndike Hotel in Boston and the Atlantic House in Nantasket. A graduate of English High School and president of the class of 1891 at M.I.T., he was a member of several historical societies, including Founders and Patriots, Sons of the Revolution, and the Society of Colonial Wars. Mr. Damon was also a member of the Boston Rotary Club, the Country Club of Brookline, and the Eastern and Corinthian Yacht Clubs of Marblehead. He leaves two sons, Sherman and Lawrence B., both of Chestnut Hill; and a daughter, Mrs. W. Russell Fawcett of Rancho Sante Fe, Calif.—**William Channing Brown,** Secretary, 15 Forest Avenue, Hastings-on-Hudson, N.Y.

'95

It was a pleasure indeed to receive a two page hand-written letter dated July 11, from **Judson C. Dickerman:** "With Bixby, '95, Course X, having passed on, it appears that I am the only remaining graduated member of that course, '95. I had tried in recent years on rare occasions to contact him by mail at the address given in The Review but never got any reply. I am still able to be about, doing a few chores about the house but have had to give up my choir singing after nearly 70 years; and my wife, who is considerably younger than I, of late insists that she or my daughter accompany me when I go downtown or to the doctors. I still enjoy watching the birds, squirrels, and occasional rabbits, and quails that come onto our considerable lawns, enjoy hearing music, and above all the communications from my four children, and two older grandchildren, one of whom is now on U.S. government assignment in Somaliland, East Africa. The two older grandchildren chose colleges other than M.I.T., as did my two sons. I still have one grandson, only three years old, who may be a candidtate to benefit from the '95 class fund in the course of time. However, the curriculum of a M.I.T. student has become so arduous that it is difficult to understand how even a fairly capable youngster survives it. . . . I am hoping to be able to celebrate my 90th birthday with a family reunion next October 15, with all my family present except perhaps the grandson in Africa. As long as my security continues and the considerable deductions in income tax allowances continue or remain greater than the financial cost of my maintenance, and while my family continues to exhibit so much personal regard for me, I shall desire to remain in circulation. Your classmate, Judson C. Dickerman."—**Andrew D. Fuller,** Secretary, 120 Tremont Street, Boston, Mass.

'96

Present at the Alumni Day luncheon were **Robert** and Mrs. **Davis,** Secretary **Driscoll,** and **Myron Pierce.** Across the table was George Taylor, '94, the oldest alumnus in attendance. He was a year ahead of me in Brookline schools; the practice of having students who passed Tech entrance examinations leave high school before the senior year was a mistake that Taylor recognized during his first years at M.I.T. Perhaps that was a contributing cause of so many flunkings-out in freshman year. . . . Joseph Harrington, Jr., '30, greeted us classmates of his father; his son, Joseph Harrington, 3d, '61, had gone to Austria for a church wedding to an Austrian girl. . . . Don Severance, '38, introduced us to Mrs. Eleanor Jack and Professor Norbert Wiener, distinguished guests who were made honorary members of the Alumni Association.

$184,000, $651,000, and $300,000 were gifts to M.I.T. from the Classes of 1913, 1923 and 1938, respectively. At the dinner, '96 was the oldest class at the senior table with 1900 and 1902. Stanley G. H. Fitch, '00, had an initial 'H' that he said was for the **Hyde** family; **Charlie**'s picture in 'Civil Engineering' was sent to me by Burton G. Philbrick, Secretary of '02, who worked under him from 1907 to 1911

Sloan Fellows

George F. Schuning, Jr., '60, has been promoted to general manager of the J.O. Ross Engineering Division. . . . **Joseph F. Rex, '58,** is now manager, Paris Kitchen, the Campbell Soup Company. . . . **Robert E. Huber, '61,** was recently promoted to area plant manager of the Long Lines Department of the American Telephone and Telegraph Company; Mr. Huber is living in Kansas City, Mo. . . . **Eugene R. Karrer, '59,** is executive engineer of Product Test and Development at Ford Motor Company in Dearborn, Mich. . . . **Frederic D. Randall, '54,** is managing director, Dista Products, Ltd., Eli Lilly International Corporation, Liverpool, England. . . . **James R. Cumberpatch, '60,** was recently promoted to Deputy Chief of Staff for Research and Development, U.S.A.F.—**Peter P. Gill,** Secretary, Room 52-455, M.I.T., Cambridge 39, Mass.

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on water development in Oakland, Calif. . . . The Plymouth local newspaper had in its current issue, an item concerning a proposed "Indian Disneyland" on 700 acres whose principal owner is Henry Hedge. . . . The M.I.T. Alumni Center of New York, at 345 East 47th Street, invites Alumni to become members; the location is the Engineering Center that our late classmate, **Charles Trout,** American Society of Civil Engineers, was interested in building. . . . **Henry Hedge**'s resignation as assistant secretary was reluctantly accepted.—**James M. Driscoll,** Secretary, 129 Walnut Street, Brookline 46, Mass.

'97

My appeal for class news, which should have reached our 29 surviving members, evoked a response from but two classmates, **Pete Noble** and **Will Binley.** Pete responded with a reminder of his excellent efforts as first marshal, 66 years ago on Class Day. He told nothing, however, of his later experience with A. French Spring Company. . . . Will contented himself with reporting as our sole representative on Alumni Day, June 10.

I shall begin my threatened "pseudo" historical-biographical account of the lives of various members, starting with **Henry Ballou.** (About **Frederic Atwood,** XIII, I have little information. Our famous **Atwood** was "Little **Tommy,**" Course I, who built the Yale Bowl.) Henry Ballou could report many successes as a tennis player of yore, as a power plant designer (as Jenks and Ballou of Providence) and as the owner of a unique elevated reading room on almost the highest elevation in Rhode Island. This arrangement adjoins his rebuilt colonial residence some seven miles from Providence. Just prior to our 50th Reunion,

Frank Shepard, Ben Howes and myself spent a memorable evening there before departing the next day for East Bay Lodge. Henry should tell us how he climbs the 70-foot tower, when he feels inclined to read the Ladies Home Journal in 20-degree weather. . . . **Charles A. Bolles,** Course VI, is next on our list but as he is not on the active list, we should next hear about Will Binley and shipbuilding at Hingham by Bethlehem. —**George R. Wadleigh,** Acting Secretary, 70 Flower Avenue, Hastings-on-Hudson, N.Y.

'98

Our '98's 65th Reunion of last June 10-11 was a very successful affair. Nine classmates, some with guests, attended the Alumni luncheon in the Great Court on June 10. These included Ed Chapin, with his sister Marion and his daughter and son-in-law, Elizabeth and Professor Holden Furber; Al Davis; Fred Dawes with his son Robert, '26; Dave Fenner; Lyman Hewins, with his son and daughter-in-law, Comdr. and Mrs. Spencer Hewins and his daughter, Mrs. (Col.) Robert Gallagher; Fred Jones with his daughter, Audrey; Bob Lacy; Professor Joe Riley; Mrs. Arthur Blanchard; and our honorary classmate Dean George Harrison. At this luncheon, President Stratton delivered the main address. In the morning a few of us visited the National Magnet Laboratory where research is conducted on the effect of extremely high magnetic fields on various metals, or the Compton Lecture Hall where we were shown devices for making brief pulses of intense visible light for studies in spaceage technology.

The high light, of course, was the meeting the next day, June 11, at Babson Park in Wellesley Hills where we were guests of **Roger Babson.** Here the same group that was at the reunion the previous day gathered at 11 A.M. The only one missing was Mrs. Blanchard, who thought it best not to venture out in the unsettled weather. Here all details had been methodically arranged and guides saw to it that all were kept together and instructed at various stops in the itinerary through the campus. The two hours allotted before lunch was spent in visiting, first the Babson Globe which is the world's greatest revolving globe. As the weather became somewhat rainy, Roger guided us to the second floor of the Coleman Map Building directly in front of the Globe where we watched through the windows the Globe's revolutions and listened to explanations by Roger himself and by Teresa, the curator. While there in the Map Building, Roger and Teresa reviewed for us the interesting features of the Giant Relief Model of the United States. The gym was visited quickly and then we strolled or rode individually to the Sir Isaac Newton Library where the special attraction was the actual room in which Newton lived in the 1700's, moved there from London. There we saw the bullet hole in a window shutter and where, from sunlight through that hole, Newton made his experiments with glass prisms—a thrilling thought for us all to look back upon.

It was then 1 o'clock, and we all assembled in the Park Manor North Building where in the large Fo'c'sle Room, an excellent catered luncheon was served to the '98 men and their guests and to personnel and other guests of the Babson Institute —about thirty being served. Secretary **Ed Chapin** presided at the head table where also were seated the hosts, Roger and Mrs. Babson, George Harrison and George Rideout. After luncheon Ed read to us some replies from classmates who, for various reasons, were unable to attend the reunion. We then adjourned for a class meeting held at the far end of the same room and where George Rideout, Vice-president of Babson's Reports, gave an instructive talk on gravitation and progress to date of studies and theses relating to means for neutralizing gravitational force. Papers, he said, had been received from all classes of people, many of them cranks. The subject is being continued, however, and replies from any who may have thoughts on this subject will be welcomed; and, as Roger has said, sometime some tangible and applicable idea may pop up. Dr. Harrison then gave a thoughtful and studied talk which he said was suggested by Ed, outlining in a general way the progress and rapid strides made in science since we were graduated 65 years ago. . . . A vote of thanks was extended to Roger for his generosity in providing his classmates and other guests a wonderful and long-to-be-remembered time at Babson Park on our 65th and to George Rideout and George Harrison for their excellent talks on subjects so interesting to us older graduates.

A short business meeting was then held for election of new officers made necessary by the death of our late and beloved President, **Dan Edgerly.** Congratulations to **Ed Chapin,** our former secretary, who was quickly and unanimously elected to be our next president. To take his place as secretary, **Fred Jones,** former assistant secretary, was elected.—**Frederic A. Jones,** Secretary, 286 Chestnut Hill Avenue, Brighton, Mass.; **Edward S. Chapin,** President, 271 Dartmouth Street, Boston, Mass.

'99

William White, V, was born December 15, 1875, in Taunton, Mass., and died in the same house on April 30, 1963, a tenth generation of the William and Susana (Fuller) White family. William wanted a profession in which he might quickly rise in the world so he specialized in the chemistry and manufacture of smokeless powder, nitro starch and dynamite; fortunately he was skillful enough to avoid any catastrophe, and lived to his 88th year. He was a member of Charles H. Titus Lodge AF and AM. He leaves two daughters, Miss Priscilla Jane White and Miss Emma Story White. . . . **Samuel Brown Robertson,** I, was born in Milton, Mass. on July 21, 1878, and died June 3, 1963, at Lynchburg, Va. He worked for the Pennsylvania Railroad for 22 years and became general superintendent for the central division at Toledo. In 1927 Samuel became vice-president and general

Senior Executive Alumnus Becomes Vice-President

Meyer Leifer, Spring '57, is now Vice-president in charge of Operations at Radiation at Stanford in Palo Alto, Calif. His responsibilities include management of the R-F Systems Division, Optical Systems Division, Products Division, Magnetic Components Division and the Production Division.

Happy Birthday

Congratulations are in order during October and November for an alumnus who has just celebrated his 95th birthday; and to 8, 4 and 30 Alumni who are celebrating, respectively, their 90th, 85th and 80th birthday anniversaries, as listed below with dates of birth:

October, 1868—WILLIAM R. COPELAND, '93, on the 23rd.

October, 1873—JUDSON C. DICKERMAN, '95, on the 15th; ANDREW D. FULLER, '95, on the 16th; HALBERT G. ROBINSON, '95, on the 18th; WILLIAM D. COOLIDGE, '96, and LINCOLN CROCKER, '97, on the 23rd.

October, 1878—MICHAEL W. MURRAY, '12, on the 1st.

October, 1883—JAMES W. KIDDER, '06, on the 1st. FREDERIC E. EARLE, '06, on the 2nd; EMORY G. HUKILL, '07, on the 3rd; JAMES O. GAWNE, '10, and HENRY M. SCHLEICHER, '10, on the 4th; ISADORE J. NYE, '05, on the 12th; GEORGE M. NAUSS, '08, and MARTIN F. TIERNAN, '10, on the 15th; FRANK A. HAYES, '10, and ROBERT N. HOYT, '09, on the 17th; ROBERT L. YOUNG, '05, on the 18th; BENJAMIN F. CARTER, '07, on the 20th; CHARLES E. ABBOTT, '06, on the 21st; ERNEST M. SMITH, '06, on the 24th; RALPH N. WHITCOMB, '05, on the 25th; and EDWARD B. ROWE, '06, on the 27th.

November, 1873—CHARLES E. STAMP, '96, on the 12th; WALTER W. WELLS, '99, on the 15th; and EUGENIA B. FROTHINGHAM, '99, on the 17th.

November, 1878—MISS JULIA PULSIFER, '03, and S. WINTHROP ST. CLAIR, '01, on the 1st; RAYMOND J. MAYO, '02, on the 4th; CLYDE MACCORNACK, '03, on the 19th; and ROYAL L. WALES, '02, on the 24th.

November, 1883—BURTON W. KENDALL, '06, and GEORGE W. C. WHITING, '05, on the 1st; RICHARD F. HAMMATT, '06, on the 2nd; WILLIAM G. PERRY, '07, on the 8th; GEORGE W. BURPEE, '06, and WIEAR L. ROWELL, '06, on the 9th; HARRY P. SWEENY, '08, on the 14th; FRANK F. HUTCHINGS, '07, on the 16th; CECIL F. BAKER, '07, and NATHANIEL A. WHITE, '06, on the 19th; KARL E. PEILER, '04, on the 25th; GEORGE B. FARNHAM, '04, and GEORGE I. RHODES, '05, on the 27th; and WILLIAM A. HALL, '05, on the 30th.

manager of the Goodrich Pacific Rubber Company, and in 1931 he became manager of the tire division in Akron, Ohio, and the sixth president in 1937. He was a member of the Akron City Club and Portage Country Club. Samuel moved to Forest, Va., in 1940 after retiring from Goodrich and raised registered Hereford cattle on his farm until 1946 when he moved to Lynchburg. He was member of the Question Club and of the First Presbyterian Church. Mr. Robertson leaves a daughter, Mrs. Jane R. Titus of Lynchburgh, a sister, Mrs. Elizabeth Elkins of Portsmouth, N.H., and two grandsons. Mrs. Robertson died in 1959

Joseph L. Hern, VI, died July 7, 1963, aged 87 years. Mr. Hern was president of the J. L. Hern Engineering Company which specialized in heating and ventilating. At Tech he played on the baseball team and was a finalist in an Eastern inter-collegiate tennis championship. He was a member of the Wollaston Golf Club. He leaves a wife, Anne, six sons and three daughters. . . . **George C. Glover,** IV, died August 30, 1963, in Melrose, Mass. George was born in Auburn, Maine, May 3, 1877. After graduation he studied in Europe until 1912. He designed many homes and hotels in the White Mountain area, including the Mountain View House in Whitefield, N.H. In 1933 he opened an office on State Street in Boston; he retired just two years ago. He was a member of the Boston Philately Club, the Interchange Club of Boston, the M.I.T. Club of New York, Fidelity Lodge AF & AM of Melrose, Waverly Royal Arch Chapter of Melrose, and Melrose Highlands Congregational Church. He leaves his wife, Mrs. Florence H. Glover; two sons, John of Hingham, George Glover of Winter Park, Fla.; and a sister, Miss Myrtle P. Glover of Melrose.

On Alumni Day, on June 10, 1963, Carroll W. Brown, William A. Kinsman, Hervey and Mrs. Skinner, Harry K. White, and Percy W. Witherell saw and heard about the new buildings and plans for the brilliant future of M.I.T. and talked wistfully of the old days at "Boston Tech." We missed **Miles S. Sherrill** who was in Europe. A "little bird" tells me that Miles' former fame as baseball pitcher and athlete has stood him in good stead for he has been doing his duty in inspecting the famous Chateaux in the Loire Valley from the lowest dungeon to the highest watch towers, climbing the necessary steps with vigor. . . . **Percy W. Witherell** was a guest of American Airlines and saw the total solar eclipse in a 990 Astro-jet at 35,000 feet on July 20, 1963, and obtained some photographs of the inner and outer coronas in color, with Venus and Castor and Pollux. The perfect even flight without a tremor and the taking of pictures in color give evidence of the wonderful advances in science and engineering.—**Percy W. Witherell,** Secretary, 1162 West Street, Wrentham, Mass. Telephone, 11EV 4-3164.

'00

I regret that we must greet you in this first issue of Class News for the year with unpleasant news. The past year has been a rough one for us. A year ago we had 48 names on our class membership list. Of these 10 have since been removed by death. **Charles J. Bacon** is reported to have died on June 6, 1963. We have had very little information regarding his career since leaving the Institute in 1900. He entered the employ of the DuPont Company about 1918 and was an experimental engineer with them at the time of World War I, working to increase the output of explosives. He retired from that company in 1945 as director of production for the Acetate Department after 27 years of service. Soon after retirement he moved to Santa Barbara, Calif., where he lived until his death. . . . **Arthur Clarence Walworth** died August 30, 1963, in Peterborough, N.H. He was a native of Newton, Mass. He was graduated from

Deceased

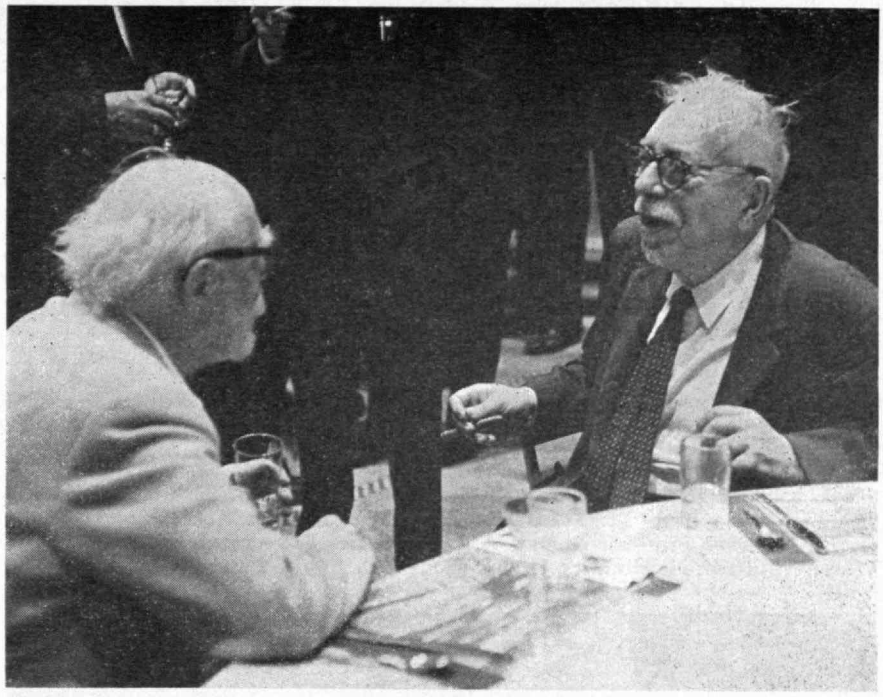
WILLIAM G. CURTIS, '90, May 28
SPAULDING BARTLETT, '90, May 12
JOHN L. DAMON, '91, July 7*
EMIL LORCH, '93, June 20
CHARLES M. SPOFFORD, '93, July 2
MRS. MARION L. GRIFFIN, '94, Aug. 22
GEORGE W. SHERMAN, '94, May 26
ALPHEUS G. WOODMAN, '97, June 5
GORHAM P. STEVENS, '98, March 15
WILLIAM A. WILDER, '98, May 19
GEORGE C. GLOVER, '99, Aug. 30*
JOSEPH L. HERN, '99, July 7*
SAMUEL B. ROBERTSON, '99, June 3*
WILLIAM WHITE, '99, April 30*
CHARLES J. BACON, '00, June 6*
ARTHUR C. WALWORTH, '00, Aug. 30*
MISS ETHEL A. GLEASON, '01, March 19*
STANLEY C. SEARS, '01, March 24, 1962
HARRY R. WHITE, '01, June 23*
CHARLES H. HICKEY, '02, March 14*
FRANK H. SMITH, '02, May 25*
GEORGE B. WOOD, '03, April 23*
HERBERT T. KALMUS, '04, July 10*
CLARENCE B. WILLIAMS, '04, May 24*
FREDERICK M. EATON, '05, Aug. 15, 1962
BERTRAND L. JOHNSON, '05, Aug. 16, 1962
HARRY S. PERCIVAL, '05, Jan. 3*
EARLL C. WEAVER, '05, Dec. 9, 1962
LEROY P. HENDERSON, '06, June 13*
HERBERT S. PHILBRICK, '06, June 21*
ANDREW B. SHERMAN, '06, Sept. 9*
PHILIP B. STANLEY, '06, May 11
HAROLD E. YOUNG, '06, June 14*
LESTER W. BROCK, '07*
JOHN F. JOHNSTON, JR., '07, July 31*
EDWARD D. KINGMAN, '07*
CLARENCE H. SPIEHLER, '08, June 25*
ROBERT B. TODD, '08, Feb. 23*
RAYNOR H. ALLEN, '09, May 15*
GORDON M. GILKISON, '09, March 30*
VICTOR E. SIEBERT, '09, June 2*
DOUGLAS W. SMEATON, '09, July*
HAROLD D. BILLINGS, '10, April 17
DUDLEY CLAPP, '10, July 30*
OLIVER STEVENS, '10, April 19
FREDERICK H. STOVER, '10, Aug. 20
PAUL E. THOMPSON, '10, Feb. 3, 1962
HENRY F. DOLLIVER, '11, June 5*
WILLIAM E. FORTUNE, '11, May 11*
JOHN B. ROMER, '11, May 30*
ROLAND S. SIMONDS, '11, July 8*
EMMONS J. WHITCOMB, '11, Aug. 31*
EDMUND B. MOORE, '12*
JOSEPH I. MURRAY, '12, March*
DANA H. GILLINGHAM, '13, March 26
LEO A. HARTNETT, '13, May 29
JOHN L. KERR, '13, April 20
PETER N. SHAGURY, '13
WILLIAM F. WALLIS, '13, June 23
NORMAN D. MACLEOD, '14, May 28*
VERNON M. F. TALLMAN, '14, June 18*
BURNHAM E. FIELD, '15, May 22*
HYMEN FREED, '15, May 4*
JOHN HYNEMAN, '15, Aug. 22, 1962
PHILIP L. SMALL, '15, May 16*
VERNON T. STEWART, '15, June 26*
STEVE R. BERKE, '16, June 6*
P. P. PIZZORNO, '16, May 25*
ROY S. BARROWS, '17, July 9*
CHRISTOPHER C. CROWELL, '17, June 30*
AINSLEY C. MCCURDY, '17
HUBERT E. WELLCOME, '17, Dec. 23*
EDWARD H. MCLAUGHLIN, '18, Dec. 19
JOSE PASOS-DIAZ, '18, June 20
ELI ETTLINGER, '19, Jan. 18*
AMASA H. CASTOR, '20, Dec. 2*
T. CARLTON ROWEN, 20, June 23*
J. HAROLD STACEY, '20*
SANFORD J. HILL, '21, June 3
FREDERICK S. BLACKALL, JR., '22, July 6*
GEORGE BUTTLER, JR., '22, March 26
CARL W. HARRIS, '22, Oct., 1962
DONALD P. KNIGHT '22, Aug. 3*
HAROLD A. MOSHER, '22, July 23
DANA D. SAWYER, '22, Aug. 16
WALTER S. MARDER, '23, May 1
REIFF H. HANNUM, '24, March 22
WILLIAM D. ROWE, '24, June 3*
ARTHUR J. NAKOS, '25*
KARL T. NILSSON, '25*
ALBERT M. STOLTE, '25, May 23*
HENRY C. TRASK, '25, June 2*
ELMER S. JOHNSON, '26, May 30, 1962
A. R. TICHNOR, '26, Aug. 11*
FERRARI P. WARD, '26, July 5
MICHEL SOROKIN, '27, July 19*
SIDNEY B. WAUGH, '27, June 30*
ALLAN T. GWATHMEY, '28, May 12
EDWARD T. LOCKWOOD, '28, June 7
MORTON H. BAKER, '29, Aug. 11
ELMER W. HARMON, '30
JOHN V. FAGAN, '31, Aug. 9
STEWART B. MCLEOD, JR., '31, June 6
WILLIAM H. ROBERTS, JR., '31, June 29*
RICHARD F. SUNDSTROM, '31*
CHARLES H. WIESE, '32, Jan. 25*
ROBERT M. KIMBALL, '33, July 24
MANDELL D. STOVER, '34
JOHN R. CHENEY, JR., '35, May 15*
LINCOLN PAIGE, '35, Aug. 1*
ORSON B. RANDELL, '35, May 19, 1962
SETH C. NICKERSON, '36, Aug. 1*
RICHARD L. ODIORNE, '36, Aug. 10*
STUART V. CUTHBERT, JR., '37, Jan. 4
FRANCIS J. MCMORROW, '38, Aug. 24
WILLIAM H. SPAULDING, '38, July 5
WILLIAM E. VERPLANCK, '39, June 14*
ALBERT A. CONVISER, '42, April 16, 1962
CHRISTIAN A. KAMPMANN, '42, 1962*
LESLIE M. SLACK, '42, May 10*
SILAS D. MOLYNEAUX, JR., '44, June 17
ROBERT W. GARDNER, '46, Feb. 24, 1962
JOHN W. GARDNER, '46, Feb. 24, 1962
JOHN G. STEVENSON, '49
EDWIN P. GLADDING, '57, July 24
JOHN L. CUTCLIFFE, '59, May 20
* Further information in Class News.

Yale in 1897 and then came to M.I.T.; he was graduated in mechanical engineering in 1900. He then entered the employ of Walworth-English-Flett of Boston and remained with that company for more than 50 years. In his own words he was successively office boy, draftsman, inspector, resident engineer, secretary, vice-president and president. This company engaged in engineering and contracting work in construction that had to do with piping—including heating, water piping, ventilation, and air cooling, refrigeration and fish freezing, skating rinks and theatre cooling. The company has worked from Houston, Texas, to St. Johns, Newfoundland. Clarence was a pioneer in the development of fin-tube radiation and was founder and former president of the Vulcan Radiator Company of Hartford, Conn. He also was connected with an agency in Boston for the Ray Oil Burner for heavy oil for industrial purposes. He lived most of his life in Newton but in later years spent his winters in Florida where he had a home in Bradenton. He died at the age of 88 years. He is survived by his wife, Ruth (Lippencott) Walworth; a son, Arthur C. Walworth, Jr., of Newton Centre; a daughter, Elizabeth Walworth Ross, (Mrs. Robert Ross) of Duxbury; a sister, Miss Mary Louise Walworth of Newton Centre; and a brother George Walworth of Skaneateles, N.Y.

Your secretary was happy to call upon two of our classmates during the summer. **Levi Jennings** was found to be living in a delightful country home (which was that of his boyhood) in Weston, where a pleasant hour was spent with him and his wife. **Jim Patch** and Harriet were found at their country place in Carlisle. Here they live a happy retirement with their vegetable and flower gardens. Although Jim is considerably handicapped by arthritis they both seemed to be in good health and as active as possible. . . . **William Fulton,** in an acknowledgement of a birthday card sent him recently in the name of the class, writes: "Mrs. Fulton and I have been blessed with excellent health over the years (will celebrate our 60th anniversary next April 4) and now have our sights set on the 75th only 15 years away."—**Elbert G. Allen,** Secretary, 11 Richfield Road, West Newton, Mass.

'01

Since the last class notes were written some classmates have left us. Miss **Ethel Gleason,** IX, whose last address was Kissimmee, Fla., died on March 19, 1963. I have no further information. . . . One of our very faithful members, **Harry R. White,** died on June 23, 1963. He was 86 years old. He was a resident of Arlington for many years and an 1897 graduate of Arlington High School where he was very active in athletics. He was born September 9, 1877, in Cambridge. He moved to Arlington, where he received his grammar and high school education. At high school he played hockey, football and baseball. He graduated from M.I.T. in 1901 with a B.S. degree in naval architecture. In 1903 he joined Harriman Brothers and Company, Inc. as engineer in charge of maintenance. He joined the American Telephone and Telegraph Company in 1910 working on exchange fundamental plans. He transferred to the equipment group in 1918. For two years he worked on engineering chart studies and on P.B.X. until his retirement in 1942. He leaves his wife the former Alma Noyes of Arlington. . . . **Mrs. Aurora H. Lawrence,** VII, Special, writes from Foxboro that she broke her hip in January, 1959 and did not get to walking again. Unable to maintain her home, she is now in a rest home in Foxboro.—**Theodore H. Taft,** Secretary, Box 124, Jaffrey, N.H.



Edward H. Davis, '01, (left) and Institute Professor Wiener, participated in both the Alumni Fund Conference and the Alumni Seminar Program early this fall.

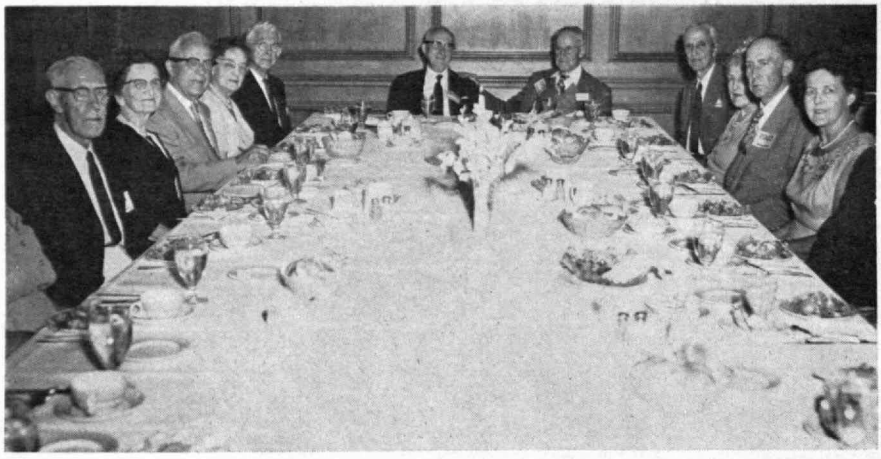
'02

Our class was represented at the Alumni Day luncheon by **Arthur Collier** and Mrs. Collier, **Dan Patch,** and myself. Only the Colliers stayed for the banquet. We are getting scarce. The Colliers had but recently returned from an auto trip to Chicago to attend the Unitarian-Universalist Conference as delegates representing the Laymens League and Womens Alliance. They made the trip leisurely stopping at Syracuse, Cleveland, and South Bend, on the western journey and after a few days at the conference returned by way of Michigan and Canada. They had two days in Lansing and then went on for a short stop at Detroit. Toronto was their next stop, then on to Montreal and home for a total 2,600 miles. They report that the country was beautiful in its springtime freshness.

Death has taken two of our classmates. **Charles H. Hickey,** VI, and **Frank Hill Smith,** II. Hickey lived in Braintree, Mass., and was for years with the U.S. Food and Drug Administration at its Boston laboratory on Atlantic Avenue. He passed away March 14, 1963. Smith made his residence in Dayton, Ohio, where he was well known for his activities in the construction field. In 1916 he founded Frank Hill Smith, Inc. He designed and constructed many Dayton buildings such as the Van Cleve and Miami Hotels, the Rike-Kumler Company and Lowe Brothers buildings. He was also responsible for the Mead Pulp and Paper plant in Chillicothe. He served as a director of the Winters National Bank and Trust Company for several years and was a director of the Van Cleve Hotel until his death. He was instrumental in the founding of the Dayton Country Club and served as its president for many years. His death occurred on May 25, 1963. He left a daughter, Mrs. J. Spencer Janney of Cincinnati, and a son, Francis Hill Smith, of Boston. . . . **Lewis Moore** spent the summer at Sugar Hill, N.H., among the White Mountains. . . . **Dan Patch** has sold his old home in Stoneham, Mass., and taken up residence in his Friendship, Maine, summer home. (Box 193).—**Burton G. Philbrick,** Secretary, 18 Ocean Avenue, Salem, Mass.

'03

Well, classmates, the long-heralded 60th Reunion of '03 was accomplished on June 8, 9, and 10 (Alumni Day) and attended with all the vigor of youth plus the accrued enthusiasm of age. There have been other unsuccessful attempts at 60th Reunions, and now the Class of '03 has made its 60th a reality and issued a lasting challenge to further alumni en-



Shown gathered at their 60th Reunion last spring, members of the Class of '03 and their wives were: (from left) John Dooley, Mrs. Welsh, James Welsh, Mrs. Garcelon, George Garcelon, Professor Audrey A. Potter, Class Secretary John J. A. Nolan, Treasurer Augustus Eustis, Mrs. Griffin and Charles Griffin, and Mrs. Kent Atwood.

At the opposite end of the banquet table were seated: (from left) Kent Atwood, Prof. Helen Potter, William Gilker, Mrs. Audrey A. Potter, Tyrell Cheney, Leroy Thwing, Mrs. Thwing, Gould Murphy, Mrs. King and Robert King, Mrs. Roy Gould and Mrs. Dooley. 1903's was the first successful attempt at holding a 60th Reunion.

deavor. Although in the beginning our plans were sketchy, the eager response from many classmates so encouraged your secretary that plans soon went forward to final completion. Classmates arrived on Saturday June 9, eager to join the jovial group in Baker Lounge. Anecdotes about Rogers, the professors, the Sophomore Cane Rush, class football games, junior prom, and the reception accorded newly arrived freshman by the seniors in the Rogers Library, were all recounted.

Our rooms throughout the three-day reunion were in Baker House, beautifully situated and fronting on the scenic Charles River. This residence is quite a change from the days when the majority of M.I.T. students commuted from home until the Tech Chambers was built at Trinity Place. Our restful accommodations at Baker House and the delightful meals at the Graduate House nearby were deeply appreciated by us, and were arranged through the generous co-operation of F. G. Lehmann, '51, Secretary of the Alumni Association, and F. L. Foster, '25, Deputy Chairman of the Alumni Day Committee.

On Sunday evening, June 9, at 6:30 P.M., our merry group gathered at the M.I.T. Faculty Club on Memorial Drive near the President's house. About 25 of us enjoyed a bountiful menu, especially arranged by Mr. William Morrison, Manager of the Faculty Club. Mr. Morrison anticipates adding our 60th Reunion Class Picture to the Club lobby. Our distinguished and popular classmate, Professor Emeritus **Andrey Potter** of Purdue University, Indiana, was unanimously acclaimed chairman and speaker of the evening. During his introduction, your secretary took the opportunity to read Andrey's recently received citation from the American Power Company: "Desiring to honor one who has contributed greatly to engineering education and to the advancement of the power industry, the American Power Company awards this citation for distinguished service to Andrey Abraham Potter; in recognition of his outstanding achievement as engineer, educator, scholar and leader of men; for his eminent contributions to knowledge through his researches in the field of power plants and thermodynamics; For his renowned dedication to youth and to their education and well being; For his devoted promotion of engineering progress through high office and inspirational leadership, as attested by numerous honors bestowed upon him; For his deep concern for the welfare of others as evidenced by his valued services to government, industry, professional organizations and his fellow man; For his wise guidance and council as a founder and loyal supporter of the American Power Conference." This citation was presented to Andrey in Chicago. When read at our reunion, the response from our classmates was a long outburst of applause which no doubt much surprised Mrs. Potter and their charming petite daughter, Professor Helen of the Economics Department of Loyola University.

Andrey modestly opened his address by making a motion to the group, that, as **Jim Welsh** is blessed by a son who is a bishop in the Washington Cathedral, it was therefore thought fitting that he be appointed permanent chaplain to the Class of '03. The motion was unanimously seconded and applauded. After overcoming his surprise, Jim calmly and reverently acquiesced with a brief and appropriate prayer. Andrey's interesting address was abundantly filled with memories of former days and the class sessions in Rogers, Walker and the Trinity Place laboratories that encompassed the little world of M.I.T. at that early period. With your permission, the secretary proposes to publish the address in full in later Review notes for keener enjoyment. . . . **Tyrrell Cheney** added many more humerous anecdotes of former events and classmates.

Our supper was briefly suspended by the sudden arrival of Dr. Killian, '26, and Mrs. Killian, who drove from their home to meet with and to congratulate individually each member of our group, for our loyalty to the alma mater and our agility. The memorable supper festivities were finally ended and all were loath to leave but did so with restful memories and dreams to brighten our remaining years. . . . Many of you have already received your attractive, souvenir pictures of our banquet scene of classmates and some wives. Mrs. **Leroy Gould** with daughter Mrs. Marjory Gould Murphy, filled in for our late devoted former secretary. Due to mature infirmities on the part of classmates, we missed the presence of Scotty Morse, Louis Rapp, Arthur Allen, Paul Parker, Walter Regerstein, George Clapp, Lawrence Lee and Charlie Bates. They had all anticipated joining us for the reunion. Your secretary takes this opportunity to publish their loyalty to their alma mater and regrets that we did not have the opportunity to renew cherished memories with them.

Our Happy Birthday congratulations go to **Horace S. Baker,** I, who celebrated his 85th birthday on July 18 and to **Mrs. Ferruccio Vitale,** VII, who had her 80th birthday on September 28. . . . Gertrude and **Ike Atwood,** II, our Alumni Councilor, have just returned from the Orient and are now at their Topsfield Farm home. Mrs. Atwood was elected president of the Massachusetts Association of Women Lawyers at their 58th annual meeting at the White Cliffs on June 3. Mrs. At-

wood succeeded Mrs. Ethleen H. Diver of Lexington as head of the 350-member organization.

George B. Wood, II, retired president of the Rockland-Rockport Lime Company, died in a local hospital April 25 at the age of 82 after a brief illness. He was born in Syracuse, N.Y., November 28, 1880, son of William and Agnes Babcock Wood. Mr. Wood attended the Boston Latin School and received a B.S. degree from M.I.T. in 1903. He went to Rockland in July, 1911, as general manager of the Lime Company and for many years was its president prior to his retirement in 1944. He was a charter member and past president of the Rockland Rotary Club, active in the Red Cross and Knox County General Hospital work and other civic activities, and had been chairman of the building committee of the universalist church. He and Mrs. Wood had traveled extensively since his retirement. He is survived by his widow, Mrs. Martha Cobb Wood; a son, George B., Jr. of Needham; two brothers, Austin C. of Fort Meyers, Fla., and Frank A. of Manchester, N.H.; and four grandchildren.—**John J. A. Nolan,** Secretary, 13 Linden Avenue, Somerville, Mass.; **Augustus H. Eustis,** Treasurer, 131 State Street, Boston, Mass.

'04

We received no cards from vacationing classmates this summer so have no such activities to report. Apparently our treasurer, **Gene Russell,** who played some golf at Jaffrey, N.H., was the only man able to move. Alumni Day is long forgotten but for the record we are glad to report the attendance of Gene Russell, Tammy Rockwood, Dan Comstock, Arthur Smith, Mr. and Mrs. Harry Rollins and Mr. and Mrs. Carle Hayward, all of whom enjoyed the festivities and a visit with each other. This is a first reminder of our 60th Reunion coming up next June. Plans are very nebulous at present but if you have any ideas please send them along. . . . Just too late for enclosure in our July notes we had the sad news of the sudden death of **Clarence Williams** at Utica, N.Y. Clarence was founder of the Williams Steel and Rim Company of Utica and was still active in its operations. He was associated with numerous civic activities in Utica and will be greatly missed. He was interested in class affairs and was among those who attended our 50th Reunion at Oyster Harbors.

The death of one of our most widely known classmates, **Herb Kalmus,** occurred on July 10 at Hollywood, Calif. Herb was internationally known because of his part in developing the Technicolor process. As all '04 men know, the early work on this process was carried on in collaboration with another classmate, **Dan Comstock** and a third associate W. B. Westcott. It was a long and expensive struggle to perfect the process and interest the motion picture industry. For reasons which have never been made public, Kalmus separated from Comstock and Westcott in 1922, and from that time on, with the help of his first wife Natalie and financial backers, finally made a success of the process. The firm of Comstock and Wescott is still a successful research and development company. Much credit is due Herb for his perseverance in overcoming the numerous handicaps to bring colored pictures to a final success. In 1958 the motion picture and television engineers went on record as saying "More than any other person he has been a dynamic influence which has brought color pictures to the motion picture theatre."—**Carle R. Hayward,** M.I.T., Room 35-304, Cambridge, Mass.; **Eugene H. Russell, Jr.,** Treasurer, 82 Devonshire Street, Boston, Mass.

'05

Certainly '05 more than held its own in attendance at Alumni Day, quantitatively and qualitatively, of course. Present were Elizabeth and Court Babcock; Len and Beatrice Cronkite; Andy and Francis Fisher, with daughter, Edith Hunter and grandson Graham; Myron and Rose Helpern; Charlie and Isabel Smart; Balkam, Buff, Charlesworth, Joslin, Kenway, Mclean, Nye, Tower and Ruth and your secretary. Edwin Hadley, '38, son of the late **Ralph** and Grace **Hadley** introduced himself and was warmly welcomed by our group. Anyone who has seen **Izzy Nye** recently will appreciate this joke. It seems that at a smoker Izzy attended, held at the Somerset Hotel, Boston, the M.C. introduced him as "Sam Rayburn." If you don't get it, write him for a recent photo. . . . Isabel **Smart** told me she is serving as a private secretary in the Department of Education of Russell Sage University in Troy. Meanwhile **Charlie** is busy at director's meetings.

I received a letter from the **Gib Towers** last May which I was unable to get into the notes. They toured through Lisbon, Portugal; Tangier, Morocco; Naples and Genoa, Italy; and Palermo, Majorca, Gibraltar and Madeira—a 20-day trip. . . . **Ted Moorehead,** I, reported on August 18 that my letter reached him while he and Mrs. Moorehead were making a year long, round-the-world tour, this time including Russia and Austria. He adds: "I lost my oldest son, aged 49, last year, just before we started our trip. Seven of my grandchildren have finished high school and two have already graduated from college. My wife and I keep well, in spite of some of the ailments of old age." Why think of old age, Ted, when you can make a 12-month world tour? Ted's address is 279 Lee Street, Oakland, Calif. . . . **Charlie Dean** writes: "I have a quiet life of golf three times a week when in Carmel (California) and in the meantime do frequent traveling about the world. My wife and I are in good health and keep happily busy." . . . **Charlie Mayer,** I, reports: "really nothing new about myself, only getting older and probably more ornery. Have three daughters, six granddaughters and one grandson—but no great-great grandchildren."

Bob Beard writes from Berkeley, Calif.: "As for Mrs. Beard and myself, we have been pretty much tied to the home place since our botanical expeditions of last spring to Death Valley, the Mojave Desert, the San Bernardino and San Jacinto ranges, Palm Springs and Indio, and to the area between Livermore and Mt. Hamilton and to the Greenhorn Mountains. Two books of my math drawings are being mailed to you. I will be glad to give such a book to any '05er, who enjoys doing something with what is recollected of our prehistoric training in math." I have since received one of these books. In it are many superb specimens of Bob's intricate drawings, also a lot of original workings-out of brand new theories and theorems of triangular functions. This book would be a challenge to anyone interested in the highest of higher mathematics, in other words, as Bob says, "a mathematical screwball." I urge you to accept the challenge. . . . **Herb Bailey** reports: "There is nothing much new with me. I still have my jobs (non-remunerative) on the County School Board and Civil Service Commission that take me to our county seat 22 miles away several times a month and now and then further afield to a convention. I enjoy them but will have to give them up before long as my eyes are sort of going back on me and just now I am having some trouble getting my drivers' license renewed. I am most fortunate in having my daughter and her family living in the old home and taking care of me. So many of my old friends who have lost their wives and some who have not have moved into some "Home for Retired People" and seem to miss the old familar things that they had accumulated during many years, most of all the old neighbors. All three of the Moore grandchildren are home this summer and have just finished six to eight weeks of summer school."

All of the notes from Californians may cause you to wonder "how come." They resulted from attempts to learn from our California classmates some details implied in a notice: "Died, on December 9, 1962, **Earll C. Weaver** of 710 Deodora Drive, Altadena, Calif." As a result of all these letters I received an obit from a Pasadena newspaper, which contained no other information than that Earll left a son Earll C. Jr., a daughter and three grandchildren. . . . In May **Hub Kenway** made a business trip to the "auld sod" in Dublin to meet and consult with his British patent associate for a conference on patents in the shoe-making field. In a letter from there he tried to trip me again about his old friend **'John Jameson.'** I "bit" once, providing a laugh in the class notes of a few years ago, but Johnnie has since been introduced to me and "no soap." In August Hub and Helen had a picnic at our grounds in Sandwich, also in September an outdoor picnic at their farm in West Franklin, N.H. We tried to get **Bill** and Alice **Spaulding** in on one (or both) but Bill has so many relatives in and around Conway, N.H., and Fryeburg, Maine, that they couldn't make it. The Spauldings called on us here in Sandwich en route; both looked very well and are still enjoying life to the full around their permanent home in Norfolk, Va.

Fred and Dorothy **Poole,** VI, called on us on their way home from a trip to Dexter, Maine, where they took many pictures of the eclipse. Dorothy is quite an authority on scientific photography; in fact their car was so completely filled with gadgets that they had little room for personal effects. She has many film strips (with lectures) on "Mollusks" and "Shells." Fred is still the bird watcher. He showed me his manuscript "Birding Tips for Adult Beginners," in fact left a copy with me for inspection. He expects to have this published soon. Both Fred and Dorothy seemed very well and happy. . . . An issue of Class News would not be complete without mention of **Andy Fisher** (by the way did you see the picture of Andy and your secretary in the July issue of The Review?). He tells me that **Walter Eichler,** II, is enjoying life with his sisters in their fine home in Harwichport, Mass., that **Prince** and Ethel **Crowell** are hale and hearty and earlier this year observed their 55th wedding anniversary. Andy is quite a disciple of Dr. Jarvis; he suggests that all '05 men take a kelp tablet at each meal, also regular doses of cider vinegar and honey, plus a nap every day. Someday our children will be reading of a reporter interviewing Andy on his 100th birthday and hearing of the above regimen as the secret of his longevity. Being in a statistical mood, Andy reminds me that of the '05 men now living, 50 are in the vicinity of Boston, 7 on Cape Cod, 10 scattered around the state of Massachusetts, 10 in California, 9 in Florida, 25 scattered around New York City, all other states, 32. . . . Changes in address: **Roy H. Allen,** Orangewood Apartments, 301-7-8, 7550 North 16th Street, Phoenix 20, Ariz.; **John C. Damon,** 604 Closter Dock Road, Closter, N.J.; **Isadore J. Nye,** 1440 Beacon Street, Brookline, Mass. . . . **Harry S. Percival,** VI, 60 Poplar Street, Garden City, N.Y., died on January 3, 1963. I have no further details.—**Fred W. Goldthwait,** Secretary and Treasurer, Box 32, Center Sandwich, N.H.; **Gilbert S. Tower,** Assistant Secretary and Treasurer, 35 North Main Street, Cohasset, Mass.

'06

Most of the regulars were on deck Alumni Day June 10—the Chases, Coeys, Hoefers, Rowes, Bill Abbott, Charley Kasson, and Jim Wick with his '06 cane. We missed other regulars, the Hinckleys, the A. B. Shermans, and Jim. I had taken along a Tech postcard which we all signed and before sending it I added: "They all send best wishes, Jim, and also elected you president for another five years, at the same salary." Jim doesn't venture far but gets around, with his limitations and his cane. . . . This summer Marion and I have made up for my convalescent inactivity last year. Since the latter part of May we have surely been around. Beginning with a visit to see our son and his family in Connecticut and a long-time friend in New Rochelle, we then spent a few days in Orleans and on Nauset Beach; next to Coast of Maine at Kennebunk Beach and to Cape Cod for a week in West Falmouth. Our neighbor's Morgan Horse Farm above Rutland, Vt., was next, then Manomet, and a day visit to Cape Ann and famous Bearskin Neck. In June **Bob** and Ann **Rose** took us aboard the 'White Heron' and north along shore into and around Gloucester Harbor, again in July south along shore into outer Boston Harbor. We hope you-all had a pleasant summer too.

Since the letters from **Fay Libbey** and **Jack Norton** mentioned in the July notes, several letters have arrived, also the announcement from **A. B. Sherman,** VI, and Sadie that the '06 Class Baby, Gretchen Charleen Sherman, was married July 27, 1963, to W. Culver Tilden in Rochester. May they live long and prosper, say we all. . . . **Herb Ball** wanted the address of an antique dealer he thought lived in Wellesley but it proved to be Douglas Hill near Sebago in Maine, where he runs the Glass Basket Antiques. . . . **E. B. Bartlett,** VI, admitted he reads The Review and these class notes, that he is 19 years retired, plays a little bridge, is interested in, and reads books about, government and foreign affairs, and he and his wife have stopped going to Maine summers but still go to Arizona in February, and expect to turn up at our 60th, if, etc. . . . From **Stew Coey,** VI, came a clipping reporting a signal honor which had been conferred on Kent Day Coes, son of our late class president **Harold Coes** and Agnes. At the annual meeting of the National Academy of Design he was elected an associate member in the aquarelle (watercolor) class. Speaking of honors, Stew also reported that he had heard that **Joe Santry,** VI, had been awarded one of the highest honors given to foreigners by the Italian government, about which he hoped to get more details. None to date, however, as he and Betty were about to leave for Alumni Day and Squirrel Island for the summer.

Elmer Dwight McCain, I, recently sent me a most interesting letter, with a clipping giving the history of his Hill Crest Orchards outside Frederick, Md., which he had sold to a real estate developer. Dwight says: "As I entered M.I.T. in the junior year from Washington and Jefferson College, I did not get to know my fellow classmates as I would have had I entered as a freshman. Only worked for a few years in engineering and that was with reinforced concrete firms and as construction engineer with a well known firm of architects in Louisville. About 1913 there was a tremendous boom in apple orchards and with my two brothers I decided to get in on the boom. We found that by the time trees came into bearing literally hundreds had the same idea and found ourselves in a highly competitive line of work which was also one of the biggest gambles in the world. We were not only competing for food markets but with all kinds of insects and diseases as well as the weather. It was really heartbreaking to have a beautiful crop almost ready for harvest completely destroyed in five minutes by hail. It happened twice to me. My engineering training did help somewhat, and we used a great deal of mechanical equipment to keep operating. But labor troubles became too much of a headache for an old man and I was pleased to make a satisfactory sale." The newspaper clipping goes into much detail about the orchard, a 200-acre property on Route 40 that was sold for $1500.00 an acre, leaving Dwight the temporary manager and granting him his home residence and about seven acres of land around it for the rest of his life. It related how the orchards were started 50 years ago and owned or operated by him ever since, being known as one of the best fruit orchards in Maryland. At its peak, in the 1930's the orchards produced from 50 to 60 thousand bushels of apples a year, shipping them to Detroit, Boston, England and Scandinavia. It also produced from 10 to 12 thousand bushels of peaches a year. During those years Dwight pioneered in the wrapping and boxing of the fruit for shipment. He served as president of the Maryland State Horticultural Society; was a board member of The Appalachian Apple Society; Maryland representative of the National Apple Institute and the National Peach Council during those years. Dwight concluded his letter: "The buyer has most ambitious ideas. He even suggests that some day this may be the location of the Maryland Institute of Technology. Be fine if it works out but can hardly expect to be here to see it." Yes you can Dwight; with strong local backing and a Federal subsidy of ten millions or so it can get started "sooner than you think."

During our wanderings this summer Marion and I called on **Bill Abbott,** VI, and his wife in West Falmouth. Their 30-year-old summer home is just across Chappaquoit Road from that fine beach on Buzzards Bay, with a pier and float behind the house for access to his sailboat at the inner end of the harbor—an ideal location! The previous weekend their two married children and six grandchildren were keeping them busy. The grandchildren were still there. Later in Manomet we saw **Bill Farley,** I, and Helen at their small farm, where Bill still has what I call a sizable garden. It used to be big enough to keep the neighbors in fresh vegetables, I'm told. More recently the visit has been by phone, with **Guy Ruggles** who on his way East had made several stops and visits—a week in Chicago —and was with his sister at the old home in Reading. We wanted them over for a bit but he expected to leave shortly for Washington, D.C., where his daughter's husband is now stationed, I believe.

In the class notes last June the death of **Ralph H. Jackson** was reported, but the date and details were lacking. If proof was needed that some fellows, and wives too, read the notes of other classes as well as their own, it came in a letter from Norman Duffett, '11. He had spotted the Niagara Falls and Carborundum Company with Ralph's name, also the appeal for pertinent information. He had contacted the son, only survivor, who lives at the same address in Niagara Falls, and was told that Ralph had died about 20 years ago and his wife two years later. To get the exact date, May 8, 1942, he

had called the Carborundum Company. Incidentally, in thanking Norman I asked if N. Bruce Duffett, '40, was his son, which proved to be the case; his wife is swamped with Tech men—a husband, a son, a brother, two brothers-in-law, a nephew, and her daughter's father-in-law. I would suggest to the Alumni Association that Mrs. Norman Duffett rates a special award! . . . Now comes the sad part of my report—four deaths; **Leroy Porter Henderson,** II, on June 13; **Harold Eugene (Cy) Young,** VI, on June 14; Professor **Herbert Shaw Philbrick,** II, on June 21; **Philip J. Potter,** VI, on July 2. Their careers will be included in later notes.—**Edward B. Rowe,** Secretary-Treasurer, 11 Cushing Road, Wellesley Hills, Mass.

'07

The Class of 1907 was represented at the Second Century Fund Victory dinner given by the Corporation on May 7 at the Waldorf-Astoria in New York by our President, **Donald G. Robbins** and by **Louis A. Freedman.** . . . Alumni Day, 1963, at Cambridge was a most interesting one to attend. The Bulletin Board showed that 1907 would be represented by President and Mrs. Robbins, Louis A. Freedman, Gilbert Small, Hugh Pastoriza, Phil Walker and Mrs. Walker. This year, the tables reserved for the 50 year and over graduates were not in numerical order, so that instead of sitting with the '06 and '08 men, as has been customary, we were at the opposite end of the tent and shared a table with 1911. . . . **Hugh Pastoriza** was with his son James, '48, and sat with that class, but spent time with the '07 men at both the luncheon and evening banquet. We were happy to meet Jim and his wife.

Gil Small has found it difficult to take the time away from his business that he had planned to do and still goes to the office regularly. He finds the house in Wayland too big, now that all the family are married and living elsewhere, and is trying to dispose of it. He still uses his green thumb in gardening, in which he always has been most successful. From him I learned that **John Frank** attended his class reunion at Exeter Academy early in June and then went to Bermuda to continue his hobby of painting, as he did after our 55th Reunion. . . . **Hud Hastings** also attended the Exeter reunion.

Following the speaking at the Alumni Luncheon, I met **Henry Martin** with three friends. Henry had not been able to get to the luncheon but had stopped in to hear the various speakers. He still wears the beard with which he surprised us at last year's reunion. He told me he had had a long, serious illness and would not be able to stay for any of the remaining Alumni Day events. The afternoon events, held in Kresge Auditorium under the direction of the Department of Humanities, certainly proved to the older classes that today's curriculum contains courses that were never associated in any way with a technical education. At the banquet held in the Cage, '07 had one entire table assigned to the Class. There were three vacant places, as only three class members and two wives were in attendance. We missed **Ralph Hudson** very much, as he has been one of our most regular attendants at these Alumni Day banquets. The evening, spent listening to Arthur Fiedler and the Pops Concert orchestra, was a fitting climax to a very informative and enjoyable day.

Class of '07 officers, Secretary Philip B. Walker, left, and President Donald G. Robbins, were among those present at the 3rd Alumni Fund Conference this fall.

A card from **Bob Rand** explained his absence from Alumni Day as he was in the hospital for surgery. Newton High School's 60th Reunion of the Class of 1903 was attended by Kelly Richards, Dick Ashenden, and Bob Rand of our class. . . . On page 26 of the July, 1963, Technology Review are shown three pictures of a six-foot bronze figure entitled "Elmo" which was a gift to M.I.T. from **Sam Marx** and his wife. More details when they become available. . . . **M. E. MacGregor** continues to keep active and in the news. The Cape Cod Standard Times contained the following squib: "Milt MacGregor bowling for the Eastham TV and Radio team rolled an exceptionally fine 163 high single. To make it more outstanding, Mr. MacGregor, at 78½ years of age, is probably Cape Cod's eldest bowler." I learned from "ME" that this is candle pin bowling and his string of 163 is the highest bowled in any of the leagues at the Orleans Bowling Center this past season. He bowls in two leagues and is captain of one, "The Gutter Sweeps."

Under "Happy Birthday," on page 66 of the July Technology Review, an '07 member is mentioned as having her 95th birthday on July 28. I checked in our non-associate file and find Miss **Bertha I. Barker,** Course VII, listed there. The class news editor of the Technology Review wrote to me in reply to my questioning this birthday: "The records of the Alumni Association and the M.I.T. Registrar's office both seem to confirm the July 28, 1868, date. Since Miss Barker attended Wellesley College before coming to M.I.T., I also checked with the Wellesley Alumni Office who have the 1868 date on their records, too." On behalf of the class, I sent a note of congratulations to our oldest member. . . . While on a short vacation in Vermont, your secretary called at **Phelps Swett**'s home in Middlebury. No one was at home, but I left a card and later had a fine letter from Phelps. The family spends part of the vacation period at Lake Dunmore, some 10 miles south of Middlebury. They built a cottage there in 1916 and share it, during the summer, with their 4 children, 11 grandchildren, and 1 great-grandchild. When Phelps was at Boothbay Harbor, Maine, early in July, he met Henry B. Shepard, '16, of Newton, who for many years was a golf partner of **Ralph Hall,** and a close friend of our classmate **Dick Ashenden.**

Tucky Noyes now lives at 3 Whitney Road, Falmouth Foreside, Maine. **Ed Lee** has moved to another island in the Florida area—Marco, Fla., 33937 (P.O. Box 124). . . . **Edward H. Temple,** 101 School Street, Belmont, Mass., has moved to Lewis Street, Marion, Mass. . . . Two deaths have been reported by the Alumni Register: **Edward D. Kingman,** Course XIII, was carried in the class records as a non-associate. At one time he served as an instructor at the Wentworth Institute in Boston. His last

home address was Nassau, Bahamas, B.W.I. . . . **John F. Johnston, Jr.,** Course I, died in Berkeley, Calif., on July 31, 1963. Our membership file shows that, upon graduation, he went to California and for some time was with the Associated Oil Company, later went into the U.S. Government Service in the personnel office of the Department of Agriculture, and then worked as a civil engineer in the Conservation Service, and finally as superintendent of training at the San Francisco Naval Shipyard. A clipping from the Berkeley 'Gazette' of August 2 furnished the following further information: "John is survived by three married and one unmarried daughter and nine grandchildren. He was a member of the First Congregational Church of Berkeley; a director of the Berkeley Concert Association. His clubs were Berkeley City Club and City Commons Club, Hillside Club, Sons in Retirement, and Berkeley Senior Housing Association." Your secretary was very pleased to receive an announcement that **Gilbert Small** was married on September 3 to Kathleen A. Schandelmayer in Portland, Maine. Congratulations, Gil. The following information about the gift of a piece of sculpture by **Sam Marx** and his wife was furnished by our President, **Don Robbins.** In 1960, Sam and Mrs. Marx made a substantial gift to M.I.T., with the understanding it was to be spent for something connected with the world of art and also M.I.T. The decision of how the gift should be spent was left to the Art Committee, whose chairman was Walter Netsch, '43. The sculpture, "Elmo," a six-foot bronze figure, was suggested to the Marx family, commissioned and put in place as pictured in the July Technology Review.

Your secretary wrote a letter of congratulations from the Class to **Bill Otis** on his attaining his 80th birthday on July 7. I received an interesting reply which indicates that Bill has decided to make his permanent home on Cape Cod at Hillcrest Road, North Chatham, Mass., and has given up his Maplewood, New Jersey house. He reports an unusually warm summer for Cape Cod. . . . In the March, 1963, Review, I mentioned in the class notes a letter from **Lester Brock** telling of serious surgery he had undergone last November. Early in July, I had a note from Mrs. Brock telling of his death after a long illness. I wrote to her, extending the sympathy of the class. Those who attended our recent reunions will recall Lester as entering very fully into the events of each day. Lester took Course VI and did his thesis with **E. L. Chaffee.** He attended our 20th, 40th, 50th, and 55th Reunions.—**Philip B. Walker,** Secretary-Treasurer, 18 Summit Street, Whitinsville, Mass.; **Gardner S. Gould,** Assistant Secretary, 409 Highland Street, Newtonville, Mass.

'08

The first dinner meeting of the 1963-1964 season will be held at the M.I.T. Faculty Club, 50 Memorial Drive, Cambridge, on Wednesday, November 13 at 6 P.M. Ladies are invited. We hope to show Kodachromes. We celebrated our 55th Reunion on June 7-9 at the Melrose Inn, Harwichport, Mass. on the Cape. The following answered the roll call: Bunny Ames, Blackburn, Bill Booth, Jimmie Burch, Nick Carter, Myron Davis, Ray Drake, George Frethy, Howland, Norton, Osborne, Sampson, Sewell, Steese, Towle, and Wattles. Our guests were Mesdames Ames, Davis, Drake, Frethy, Howland, Osborne, Sewell, Steese, Towle and Wattles.

We were serenaded Saturday night by groups of M.I.T. '28, who were holding their reunion at Snow Inn. We certainly appreciated the honor. Earlier in the evening **Joe Wattles** showed Kodachromes taken at earlier reunions as well as a fine movie by Walt Disney showing the life of the beaver, Tech's mascot. Greetings were received from **Howard Luther, George Whittle,** and **Harry Bentley.** . . . June 10 was Alumni Day at Cambridge and was attended by Blackburn, Booth, Burch, Carter, Dexter, Howland and wife, Loeb and wife, Norton, Reyburn, Sampson, Towle and Wattles. The cocktail hour was held in the Armory, on account of the weather and the banquet in Rockwell Cage; then the Boston Pops Orchestra in Kresge served as a fitting climax to our 55th Reunion. . . . We are sorry to report the death of **Robert Todd** on February 23, 1963, at his home in Peterborough, N.H. . . . **Clarence Spiehler** died on June 25 in Cincinnati, Ohio.—**H. Leston Carter,** Secretary, 14 Roslyn Road, Waban 68, Mass.; **Joseph W. Wattles, 3d,** Treasurer, 26 Bullard Road, Weston 93, Mass.

'09

Time certainly moves along. It hardly seems nearly 55 years since we terminated our undergraduate careers at the Institute to become Alumni, and our 50th Reunion seems just a few months ago. Now our 55th Reunion comes next June —only a few months away. We had already announced that arrangements had been made to hold it at the New Ocean House at Swampscott, Mass. Then Alumni Day was changed unexpectedly from June 8 to June 15; the New Ocean House could not accommodate us June 12-15. Hence, your committee may be obliged to seek another rendezvous.

There were 19 of us present on Alumni Day, most of whom attended both the luncheon and the Alumni Dinner. Those present were: George Bowers; Phil and Mrs. Chase; John and Margaret Davis; Chet and Muriel Dawes; Tom Desmond; Francis Loud; Herbert Palmer; Joe Parker; Gardiner Perry; Julius Serra; Art and Betty Shaw; Laurence Shaw; Henry Spencer; George and Marcia Wallis. Although Alice **Desmond** accompanied **Tom** to Boston, she felt unequal to attending the Alumni Day activities. During the summer we received a postcard from Tom showing Westminster Abbey and stating: "Alice and I expect to spend most of our time in England and France on this trip, not returning home until October 9. Alice is doing research work here for her next historical work, which will be concerned with the tragic lives of the children of Marie Antoinette." Thus Alice is adding another biography of historical characters to the several she has already had published. . . . During the Alumni Dinner Harold E. Crawford, '13, who lives in Walla Walla, Wash., came to the '09 table and stated that **Fergie,** II, had asked him to extend his greetings to the class. . . . Early in the summer we received the following note from **Francis Soderstrom,** III, Phoenix, Ariz.: "Please accept the enclosed check for the **Willard** '09 Memorial Alumni Fund. Over the years **John** and I always kept in touch, exchanging three or four letters every year. Then twice he came to Phoenix to see my wife and me. His death came as a great shock to us. He's going to be missed by all who had the pleasure of knowing him." The check was sent to Henry B. Kane, '24, to be added to the '09 fund in memory of John.

Art Shaw, I, attended a meeting of the class agents held at the Institute this fall. At the banquet '09 was cited as having the largest percentage of contributions to the Alumni Fund last year. . . . Molly has a new address: **Maurice R. Scharff,** 757 Third Avenue, New York 17. . . . With great regret we report that death has recently taken some more of our friends and classmates. It was a shock to receive the following note from Carl Gram, Jr.: "This is a sad note to write. Mother passed on June 21 in Florence, S.C., as result of an automobile accident while driving from Fort Myers, Fla., to spend the summer with us at East Hampton, Long Island. Our youngest daughter, Carol, was with her, having spent several weeks in Florida after school; the two of them were driving north doing a bit of sightseeing when they had a blowout and the car swerved off the road and down a 30-foot embankment. Mother died instantly but fortunately Carol was only cut up and had some minor breaks. I am also writing **George Wallis** who was a great friend, as you know."

Space does not permit us to do justice to Hazel for her continued deep interest and close association with the class, particularly since the passing of her husband, **Carl Gram,** our former class president. For a number of years her home was in Levittown, Pa., and her daughters, Roberta and Gloria, lived with her when their occupations did not take them elsewhere. Recently she purchased a home in Florida. Several of us have happy recollections of the visits she paid us nearly every year in the early summer when she discussed class affairs. She was most faithful in attending our reunions and subscribed to The Technology Review to keep in touch with the Institute and our class. We all recall that she initiated the 1909 Memorial Fund contributed by widows in memory of their late husbands. She made an initial generous gift. The fund has become a permanent '09 fund. The secretary has written to Carl, Jr. expressing the sympathy of the class as well as his own. Carl also wrote a note to "Uncle" George Wallis, II, telling of the ac-

cident. George also replied stating, "It is a severe loss to the Class of 1909 as she always had its best interests at heart." A memorial service was held at the Wenham Cemetery.

Raynor Allen, II, died last May in Memphis, Tenn., at the age of 75. At the time he was president of the Bluff City Furniture Manufacturing Company which he founded in 1949. We all remember him as "Scissors" and also as one of the leading actors in the Tech Shows. He served as captain with the U.S. Engineers in France in World War I. He was a lay reader of St. John's Episcopal Church and a long-time patron of the Memphis Little Theater. We wrote to his son, John, expressing the sympathy of the class as well as our own. John replied: "Thank you so much for your kind note of June 25, 1963, regarding my father's death. He always had a very warm spot for M.I.T. as well as his classmates. Although I met only one or two of the Class of '09, I feel that I know many more personally from the stories and history Daddy used to relate to me." In addition to his son John he is survived by a daughter, Mrs. I. H. Anderson, Jr., a sister, Mrs. Charles B. Moody, and three grandchildren.

Douglas Wilson Smeaton, 77, a resident of Quincy, Mass., for 51 years, died at his home in July after a brief illness. He was born in Omaha, Neb., and prepared for the Institute at Newton High School. For 30 years he was an appraiser for the Associated Factory Mutual Insurance Company. He and Mrs. Smeaton celebrated their 50th wedding anniversary in June, 1962. He was a member of Christ Episcopal Church. The secretary has written to his family expressing the sympathy of the class as well as his own. He is survived by his wife, Ethel; two sons, Douglas, Jr. of Dover-Foxcroft, Maine, and Donald of New York City; a daughter, Barbara Roberts of Weymouth, Mass.; seven grandchildren; and one great-grandchild. . . . **Gordon M. Gilkison,** I, died March 30 in Syracuse, N.Y. He came from Oakville, Ontario, Canada, and prepared for the Institute at Hamilton Collegiate Institute. While at the Institute he was a member of the hockey team second and third years and also participated in the Tech Show. . . . **Victor E. Siebert,** IV, died June 2 at Santa Rosa, Calif. Our records show that after graduation he spent nearly all his life at Long Beach, Calif., moving to Santa Rosa in 1960.—**Chester L. Dawes,** Secretary, Pierce Hall, Harvard University, Cambridge 38, Mass.; Assistant Secretaries: **George E. Wallis,** Wenham, Mass.; **Francis M. Loud,** 351 Commercial Street, Weymouth 88, Mass.

'10

During the summer the class suffered the loss of a loyal alumnus, **Dudley Clapp,** who died suddenly at his home in Peterborough, N.H., on July 30. Dudley had retired from The Deecy Products Company, of which he was the founder and president, just one year ago. Upon his retirement he moved to Peterborough where he could enjoy the peace and quiet of this beautiful New England town and follow his love of reading and expressing his thoughts in poetry, a pastime he thoroughly enjoyed. He was a master in writing poems on topical themes. I am sure we will all remember when he delivered the class address to the Class of 1960 on their Class Day in June, 1960. It was an innovation, done in poetry, covering the history of M.I.T. Also, his poem on atomic energy was so cleverly done that copies were sent to each member of the Atomic Energy Commission. Apparently Dudley continued his hobby of poetical writing during his year of retirement as the 'Peterborough Transcript' in its editorial column in its August 1 issue stated: "Each week his poems made some hitting comment on a recent event. In a few rhymed lines he could say more than many people say in a whole book." Dud, as I always called him, and I had many pleasant personal and business relations. Both of us started our own businesses about the same time. As we lived near one another we had many sessions in discussing what would be our next move to keep going. In retrospect I know that he was very helpful in his suggestions and advice. Dudley entered the Army in 1917 and was a captain in the Chemical Warfare Corps, served in France with the Rainbow Division and as chief gas officer for the Second Corps. A Dudley Clapp Memorial Fund has been established at the Monadnock Hospital in Peterborough, N.H.

A letter from **Spencer B. Lane** advises me that he has moved from San Francisco to McAllen, Texas, and: "My wife died three years ago and my brother died two years ago. I have been retired for some time and devote my time to free lance writing and editing, work that can be done successfully in any location. At the age of 74 the construction boys figure that I am too old to continue construction work, so have been writing about it for the past six years. In case you are interested, I am a life member of A.S.C.E., due to the operation of the calendar and not to brilliance on my part, and a retired active member of the Construction Specifications Institute, again due to the operation of the calendar, although I have done quite a bit of public relations and editorial work for the SF Chapter."

My correspondent **Carroll Benton** keeps me posted on news in New York. He writes as follows: "As you probably know by this time, the M.I.T. Club of New York no longer has club rooms at the Biltmore Hotel, having severed its connection with that hotel on May 31, 1963. So last Wednesday seven of us, namely Fred Dewey, Henry Schleicher, George Magee, Gordon Holbrook, Al Hague (back from Florida), Larry Hemmenway and I met for our regular monthly luncheon at the Hotel Commodore. This was our last meeting of the season. When we resume next September we will probably meet at the new M.I.T. Alumni Center, East 47st Street. It seems to be a nice place and is centrally located in the Grand Central Area. As for myself, there doesn't seem to be much of anything to report. Mrs. B. and I had our usual spring trip, by car, to Florida, staying most of the time, as usual, at Palm Beach. While there, we went down to Key West for a couple of days. We had been there before (10 years ago) but again found the place interesting—especially the ride over the Keys. We returned home about the first of May, by way of Asheville and the Blue Ridge Mountains, as we have done on many previous occasions. (By the way, the dogwood trees around Asheville are beautiful at that time of the year). We expect to go to my old home in New Hampshire the latter part of next month for a few days and then on to Boothbay Harbor, Maine. We hope to see **Ralph** and Meta **Horne** at Sebasco Estates while we are at Boothbay Harbor (the two places are not very far apart)." At Alumni Day on June 10 the following regulars attended the luncheon, cocktail hour, dinner and Pop Concert: Mr. and Mrs. Leroy E. Briggs, Mr. and Mrs. Robert F. Burnett, George P. Lunt, Harold C. Manson, Mr. and Mrs. Murray H. Mellish, and Charles W. Wallour.—**Herbert S. Cleverdon,** Secretary, 120 Tremont Street, Boston, Mass.

'11

Among the deaths we have to report is that of our Secretary **Henry F. Dolliver.** Charlie Linehan and I visited Henry when he was hospitalized in May. We found him up and around, apparently on the road to recovery. He left the hospital for a nursing home, where he died on June 5, 1963. Henry was born in Framingham, Mass., and prepared at Framingham High. After 30 years service with the engineering firm of Jackson and Moreland, he retired in 1956. He was a member of the Payson Park Congregational Church. An ardent bowler and collector of family records, he also was a writer of "pomes" for all occasions. He is survived by two daughters, Mrs. June Brindley of Kensington, Conn., and Mrs. Elizabeth Carlisle of Durham, N.H.; also, two brothers, a sister and eight grandchildren. 1911 was represented at the funeral by Mr. and Mrs. O. B. Clark, Mr. and Mrs. Suren Stevens, Mr. and Mrs. Carl Richmond, Charles Linehan and John Herlihy. Henry's first class notes appeared in the January, 1960, Review.

The death of **William E. Fortune** of Roslindale, Mass., on May 12, 1963, is reported by his widow. Details are lacking. Classmates who met Bill at some of our "Seven come Eleven" annual dinners in Boston will remember him for his quiet kindliness. . . . **John B. Romer** of West Dennis, Mass., died on May 30, 1963. Born in Chicopee, Mass., he prepared at Mechanics Arts High, Boston and Worcester Polytechnic Institute. John retired in 1954 after 35 years with Babcock and Wilcox in New Jersey and Ohio as chief chemist, metallurgist and consultant. He had been secretary of the Boiler Feedwater Studies Commission sponsored in part by ASTM and ASME Societies, of which he was a member. After retirement he served on the Finance

A record turnout for 50th Reunions was set this spring by the Class of 1913, which held its reunion at the Oyster Harbors Club in Osterville, Mass. One hundred and thirty classmates, wives and guests attended; honor for coming the longest distance went to Brigadier Lionel Lemaire, who, with his daughter Dianne, traveled from Townsville, Queensland, Australia.

Commission of Dennis, Mass., and as treasurer of the South Dennis Congregational Church. . . . **Roland S. Simonds** of Manchester, N.H., died July 8, 1963, in Georgetown, Mass. He prepared at Haverhill, Mass., High. Ronald practiced architecture in Boston, Cleveland, Memphis and Manchester, specializing in school construction. He was a member of the First Congregational Church. He is survived by his wife Grace J. Simonds.

I attended the private funeral service held in Hancock Congregational Church, Lexington, Mass., for **Emmons J. Whitcomb** who died on August 31, 1963. Born in Somerville Mass., he prepared at Somerville English High. He was class representative for 1911 on the Alumni Council. A vice-president of Raymond and Whitcomb, a travel agency founded by his grandfather, Emmons was in the travel business for many years, and he was an active figure in Boston in the early days of air travel. Much of Puerto Rico's success as a tourist attraction resulted from a report he completed in 1945. He was also a consultant on tourism for the Government of Puerto Rico for eight years, a member of the Hancock Congregational Church, and a life member of the Scottish Rite. He is survived by his wife, Reta (Byers) Whitcomb.

Our "Keeper of the Log," **Jim Duffy,** was overseas again this summer. A card from Damascus read: "May the peace of Allah abide with you, Wherever you are, In whatever you do." Another from Crete read "Just got out of Syria the day before they closed the border for a pro-Nasser coup. Two tanks in front of the bank in the main square at Damascus." . . . Our Class Agent and blueberry expert, **O. W. Stewart,** reports a very busy season with a total output of about 12,000 boxes of the berries. . . . The secretary of our President **Howard Williams** reported him on a several months' business trip to Europe this summer.—**John A. Herlihy,** Treasurer and Acting Secretary, 588 Riverside Avenue, Medford 55, Mass.

'12

The following were present for the Class of 1912 on Alumni Day, June 10, 1963: Walter W. and Mrs. Lang; Hamilton and Mrs. Merrill; Wallace J. and Mrs. Murray; Cyrus F. and Mrs. Springall; Louis S. and Mrs. Walsh; John L. Barry; Frederick H. Busby; Albion R. Davis, Jerome C. Hunsaker; William L. Collins, and Frederick J. Shepard, Jr. . . . Word has been received of the death last March of **Joseph I. Murray** at his home in Hancock, N.Y. . . . Mrs. **Edmund B. Moore** reports the death last spring of her husband at home in Josuah Tree, Calif. . . . The name of Commander **John S. Grant,** U.S.N., has been removed from the list as mail has been returned unclaimed from his last address.—**Frederick J. Shepard, Jr.,** Secretary, 31 Chestnut Street, Boston, Mass.

'13

The Class of '13 M.I.T. set several records at its 50th Reunion. From the many letters we have received since Alumni Day, it appears that everyone who attended the festivities enjoyed himself. About 30 per cent of those who participated in the event had never (or very seldom) attended a 1913 reunion before. We are all indebted to the very efficient local committee and to all those who contacted their classmates all over the country about the reunion . . . **Lammy Lemaire** and his daughter, Dianne, surely came the greatest distance, but we must also mention others who traveled great distances to be with us: Prescott and Marguerite Kelly; Cedric Burgher; Harold and Mary Crawford; Howard and Helen Currier; Fred Kennedy; Mortimer and Hazel Allen; Bill and Josephine Mattson; Thomas and Genevieve Lough; Arnold Wahl; Louis and Edith Wright; George and Mollie Bakeman; Allen and Maurine Brewer; Ralph and Rebekah Thomas; Edward Downey; Robert and Gene Bonney. It was also very pleasing to greet the rest of our classmates from the inner circles. If any of you Buddies did not receive a list of the names and addresses of those attending the 50th Reunion, we will gladly forward one. The Technology Review (July issue) described in detail the various events of Commencement Day and Alumni Day. It also showed candid pictures of several members and guests on pages 18 and 19. . . . We were very glad and happy to greet **Marion Rice Hart,** who had just returned from one of her 'air voyages' to worldly climes. . . . It was very joyful to welcome 'Back to Tech' several others who were unable to enjoy our celebration at Oyster Harbors Club, as: William and Hellen Flanders and (daughter) Mrs. Betty Cleveland; Bill and Gertrude Horsch; Millard and Alice Merrill; Joseph Isenberg, his son James, daughter Judith and her friend Kauren Haugen; and Bion C. Pierce (our Bion's son).

The program at Oyster Harbors followed very closely that shown on the brochure you received in May. The meals were enjoyable as always and the service and excellent facilities were unquestionably of the highest quality. Friday evening was outstanding for the renewing old friendships and the making of new acquaintances. Saturday was devoted to further greetings and reminiscences or short sight-seeing trips. The Hobby Show was quite an innovation, and it produced considerable interest and variation of items, thanks to **Charlie** and Helen **Brown. Lester Gustin** again showed his versatility with his exhibits: paintings, a market control system, pictures of our winning freshman and sophomore football teams; and the graduation picture of '13 taken between Walker and Rogers Buildings. **Herbert Shaw** showed an interesting collection of antique watches with

supplemental books relating to watches. Lelia Shaw showed an elegant knitted Afghan. The **Brewsters** as usual added to our show, Ellen with her beautiful knitted sweater showing several scenes of Plymouth, and **Bill** with his invention of a squirrel-proof bird feeder. Rosalind **Capen** exhibited a tablecloth and napkins with a handsome cross-stitch design. Next reunion, we want more.

The class picture certainly showed a youthful, happy, and still good-looking group of '13ers and chief advisers. We still have a limited number of copies for anyone who did not receive a copy. . . . The social hour at the reunion was a complete success, whether you "did or you did not." The Class Banquet was outstanding under the able leadership of Toastmaster and Banquet Chairman Ellis Brewster. The officers of the class and their wives, as well as our guest speaker, and his daughter, Dianne Lemaire, sat at a central table. Brief introductory and congratulatory remarks were made by President **Thompson** and Chairman **Capen.** Toastmaster Brewster presented to Lester Gustin an engrossed citation which read: "In appreciation of his work in preparing the '1913 Class History' and in publishing it at his own expense, the Class of 1913, M.I.T., at its 50th Reunion assembled, at Oyster Harbors, June 8, 1963, presents to Lester Carlisle Gustin this record of its affection and gratitude, and further, officially endows him with the title of 'Class Historian.'" The citation was signed by the officers of the class.

The highlight of the reunion was an inspiring lecture, with beautiful colored slides of Australia, and sections of the Near East, furnished by Brigadier **Lammy Lemaire.** Preceding Lammy's presentation, President Charles showed slides depicting the demolition and reconstruction taking place in sections of Boston's Back Bay. There was also a rerun of the movies taken at the 1956-reunion clambake at the New Coonamessett Inn and at the 45th Reunion at Oyster Harbors.

Sunday, June 9 was a day of churchgoing, informal get-togethers, and some departures. The outstanding event of the day was the members' class meeting. President Thompson presided; the secretary and treasurer's reports were read and accepted, and it was voted that the 50th Reunion Committee had provided an outstanding program, and that the secretary be empowered to reserve the Oyster Harbors Club for the Class of 1913 for the 55th Reunion in 1968; and that the same group of officers serve for the next five years; President, **R. Charles Thompson,** Vice-president, **William R. Mattson,** Secretary and Treasurer, **George Philip Capen,** and Alumni Fund Class Agent **Lawrence C. Hart,** and Class Historian, **Lester C. Gustin.**

On Monday, June 10, most of the reunion celebrators returned to the Institute for Alumni Day. We were very proud of our Special Gifts Representative Bill Mattson and enjoyed his very appropriate remarks. Of course, you have received a copy of **Gene Macdonald's** witty speech delivered, as the representative of the 50-year class, at the Commencement Luncheon. Gene's former associates were so impressed with his remarks that they had them distributed to all of their present organization and to you. . . . It was suggested at our class meeting that many of the classmates desire a sectional directory. Such a directory has been compiled and mailed out. . . . It has been a great satisfaction to write your notes in the Review over the past 10 years. The response to our efforts for the 50th Reunion and the many congratulatory and appreciative letters which have been received by the Capen family have been very flattering. We both say "Thank you" from the bottom of our hearts. . . . Remember the 55th Reunion in 1968!—**George Philip Capen,** Secretary and Treasurer, 60 Everett Street, Canton, Mass.

'14

The final lap towards our 50th Reunion is already spent. About the time these notes are published, you will receive another letter from **Ray Dinsmore** and with it will be an up-to-date class roster. Let us use it to resolve that all classmates possible will be there. . . . A pleasant Alumni Day, June 10, again found classmates and Alumni greeting each other; the pleasantest words seemed reserved for welcoming those of the ever-shortening lists of older classes. Those '14ers attending were Herman and Mrs. Affel, Clarke and Mrs. Atwood, Ernest Crocker, Ray Dinsmore, Bird Duff, Leicester and Mrs. Hamilton, Arthur Peaslee, Arthur Petts and your secretary and Mrs. Richmond. Because of his wife's illness **Charlie Fiske** was unable to attend.

The Review undoubtedly contains a report of the Third Alumni Fund Conference. **Herman Affel** and your secretary attended, but **Day Dinsmore,** because of an accident, and Charlie Fiske, because of his wife's illness, were unable to be present. Charlie was in Boston but had to return to Maine the day before the conference to accompany his wife from the hospital. While he was in town, Charlie and Rich had a chance to visit together and also re-check the facilities for our reunion at the Charter House.

J. Warren Horton, who has been at the Navy Underwater Sound Laboratory in New London, Conn., since World War II, retired October 19 from his position as technical director. Dr. Horton was previously a professor of biological engineering and electrical communications at M.I.T. Early in his career, he was interrupted at his work at the Bell Telephone Laboratories to start anti-submarine work during World War I. This and later work earned him the Distinguished Civilian Service Award. For some years between this very active work he served as chief engineer of the General Radio Company. Horton is the author of the authoritative work "Fundamentals of Sonar." . . . Alma **Hamilton,** wife of **Leicester,** has always been seen at alumni affairs, and is very active in many Institute "Ladies' Committees." Unfortunately Alma fell and broke her leg while in New Hampshire this summer; she has been confined for nine weeks but is now well on the way to recovery.

Three more of our classmates have been added to our deceased roster. We announce belatedly that **Albert T. Stearns, 2d,** of the A. T. Stearns Lumber Company of Neponset, Mass., died on January 21, 1961. In recent years he resided in Miami, Fla. Stearns prepared at the Volkmann School in Boston, was graduated from Amherst College and then from the Institute. He was a member of Chi Psi. . . . The suddenness of **Norman D. MacLeod's** death on May 28 left his associates shocked. Just three weeks before then, he had joined us at the Waldorf-Astoria, New York, at the SCF Victory Dinner. With Ray Dinsmore and your secretary, he helped make plans for our 50th Reunion. Through the years he was particularly vigorous, yet his death occurred after heart surgery at the New England Deaconess Hospital. He was a regular attendant at the class reunions and active in our undergraduate years. He was a member of the varsity hockey team for four years, serving as manager his third year and as captain his fourth; he was on the varsity track team his junior and senior years, and a member of the tug-of-war team our freshman year. Mac was also a member of Osiris and Delta Kappa Epsilon. During World War I he rose to the rank of major and received the D.S.C. and the French Croix de Guerre with Palm. His citation on that occasion is well worth recording here: "For extraordinary heroism in action at Marcheville, France, September 26, 1918. While acting as artillery liaison officer, he displayed remarkable courage and judgment under terrific artillery and machine gun fire. In addition to his duties as liaison officer, he volunteered and took personal command of a detachment of infantry men who were without officers, and by his personal bravery and resourcefulness successfully withstood a violent counter-attack by the enemy." Does this not express his entire life?

MacLeod joined his father in the Abrasive Machine Tool Company of East Providence, R.I., and for years served as the president of the company. He lived then at Green Pastures Farm, Keynon, R.I. He was interested in state politics and served as state senator; he was also director of numerous organizations. Norman is survived by his wife, Maud Tucker, and by three sons.

Vernon M. F. Tallman died on June 17 at his home in Weston, Mass. In the last months he had suffered from severe asthma although his death occurred suddenly due to a heart attack. Music was his hobby while at the Institute; he was a member of the Glee Club for four years, serving as leader his last two years. He was also a member of the Class Day Committee and of Vectors. Vernon prepared at Rogers High School, Newport, R.I. He spent his business life in the public utilities field, serving as executive vice-president of the Brockton-Taunton Gas Company, the Concord (N.H.) Electric Company, Exeter and Hampton Electric Company and as director of the Orange and Rockland Utility, Inc., N.Y., and the Springfield Gas & Light Company. His

wife, Mary (Harrington), and one son survive him. One cannot pass along without recounting that his initials—V.M.F.T. —were often interpreted 'Very Many Friends Tallman.'—**H. B. Richmond,** Secretary, 100 Memorial Drive, Cambridge, 40, Mass.; **Charles P. Fiske,** President, Cold Spring Farm, Bath, Maine; **Herman A. Affel,** Assistant Secretary and Class Agent, R.F.D. #2, Oakland, Maine; **Ray P. Dinsmore,** 50th Reunion Chairman, 9 Overwood Road, Akron 13, Ohio.

'15

Hello everybody! Here beginneth the first column of the new season with the hope you and your families have enjoyed a pleasant and happy summer. Declare a Holiday—beat the drums—raise the flag —only 20 months to our Fiftieth in June, 1965. In September you received the first reunion letter. Be sure to return, promptly, that enclosed postal stating your opinions on the reunion. From your answers, plans will be made and you will receive detailed notices later. 1915-1965! . . . **Al Sampson**'s and **Barbara Thomas**' planning and preparation made our Class Cocktail Party the outstanding Alumni Day event for 1915. Widespread and enthusiastic reports said it was the best one we have ever had. Let's keep it up! It was grand to have 60 classmates and guests together again. We missed Ralph, '28, and Mrs. Jope from the Review staff and Tom and Mrs. Pitre from the faculty, Al, '21, and Pearl Wechsler; Virginia (Thomas) and Paul Johnson, '21, and many good classmates who couldn't make it. Better luck next year. The fame of this 1915 Cocktail party has spread far and wide so that it has now become a yearly fixture for us on Alumni Day. We were particularly glad to welcome **Bill Sheils** with his mother, May. We want May to be a regular yearly attendant. Glenn Jackson, the dynamo and moving spirit of '27, added a lot of life with his gay and personable presence. Come again, Glenn. Al's play by play is the best report you can have: "As the silver tongued orators concluded their ceremonials in the tents, and, the hum of the busy bees gathering honey from the Campus rhododendrons again became audible, 1915 the Class Supreme, arose, stretched and casually strolled to Barbara's Barbecue Bazaar in the nearby Faculty Club. Here, Maestro Morrison and his Corps of Handsome Handmaidens displayed Caloric Artistry in a manner to delight the eye and tickle the palate. And, well aware that such Manna from the Skies provokes a thirst, deft hands poured various "Dews from Killamarock" and assorted Ambrosias from the cellars of the late Mr. S. S. Pierce. Little wonder that this sudden action of some 60 loyal Sons, Wives, Progeny and Friends turned back the years and many a long forgotten incident was spun again and in its telling magnified to astronomical proportions; and, the elixirs brought a youthful glow to the cheek and a glint to the eye of surprising charm. All too soon the rosy rays of the setting sun and the deepening azure of the Charles announced an all too brief and wonderful day was drawing to a close. Just at six o'clock as a final burst of burnished gold illuminated the sky there came the clarion call of MUEZZIN MACK from his Minaret and all eyes turned to the Exits. Each to his preference. Some to the Seiler-Fiedler School of Uplift—others to the Scully School of Musical Interpretation and the tribal cheers of Sachem Rooney. Thus, another year mellowed by Good Fellowship passes into our vale of unforgetable memories and thereby adds increased lustre to the tradition of 1915—THE CLASS SUPREME!" Extraneous expenses were generously contributed by Al. Many thanks, Al, for your donation and our appreciation to Barbara and you for all you did to make this such an enjoyable and memorable party.

Attending Alumni Day functions at M.I.T. were, Lawrence H. Bailey, Henry F. and Mrs. Daley, Marshall B. Dalton, Bernard Landers, Archibald S. Morrison, Mr. and Mrs. Waldo F. Pike, George T. Rooney, Frank P. Scully, Mr. and Mrs. Frederic E. Waters, E. A. Weaver, Carl W. Wood, Max I. Woythaler, Evers Burtner. Incidentally and coincidentally Al's new Post Office Zip Number is 0-915. How about that? . . . **Herb Anderson** is in good health again, but couldn't make it. **Dave Hughes** said: "Moths got in my flying carpet." **Alfred Clarke:** 'I am out of the hospital and making good progress recovering from a coronary attack, but my activities are limited." **Ray Stringfield:** "I got to Philadelphia but sorry I could not go on to Cambridge. We all enjoyed the visit last month from Fran and Azel." **Bob Welles** would like us to hold this Class Cocktail Party near him in Pasadena. **Ed Whiting** was recovering from a coronary in March and was feeling much better. In May, **Bill Spencer** had some repair surgery in a Baltimore hospital which was a good job and left him feeling much better. But he had to take it easy and could not be with us. We hope that cutting won't affect Bill's appearance in his Scottish kilts that he wore at our Forty-Fifth—remember him?

Conveniently located in midtown New York at the United Nations Plaza and East 47th Street, a group of the Institute's distinguished Alumni living in the New York area have founded a new organization, The M.I.T. Alumni Center of New York. It is dedicated to the idea of service—that an alumni organization should be of service to its alma mater and that the educational institution can continue, in turn, to be of specific service to its former students. This should be of interest to some of us. Additional information may be had by writing M.I.T. Alumni Center of New York, 345 East 47th Street, New York 17. The phone is PLaza 2-6800.

News from widely scattered classmates. **Allan Abrams,** Wausau, Wis.: "Recently Nita and I were in La Jolla, Calif., where we had the pleasure of visiting **Ken King**'s widow. As Edith was planning to move back to Wilmington, she gave me a number of mementos. Among these were booklets of Tech shows. Shades of a half-century! The Royal Johnnie, 1914 edition, included members of the Class of 1915—**Dave Hughes,** stage manager; Art Munyan, '16, treasurer; **Ken King,** lyrics; music by Irv McDaniel (now claiming the Class of 1916); **Ed Fonseca,** Ken King and **Frank Scully.** There was also a book on President Richard C. Maclaurin, to whom we all owe our profound esteem. He was a soft-spoken, kindly man who had a vision of the new M.I.T. and who exercised unceasing efforts to make it come true. Peace to his soul! Best wishes to you and Fran." . . . Long time, no hear, **Lucius Bigelow** and what a determined fellow he is: "After 32 years teaching at Duke University, I retired in June, 1961. They gave me an extra year to continue my active research program in fluorine chemistry, fully financed by ARPA, but on August 31, 1962, I was required to give up all working space in the Chemistry Building to make way for the younger men. I surely do believe in the progress of all competent young people, but I also believe that competence and willingness should not be thrown away at any age. So, I decided to do something about it. Just then, the Hynes Chemical Research Corporation was formed in Durham, by three of my former graduate students. I was able to get for them a good ARPA contract, and in return, they gave me a half-time job as director of Fluorine Research. The company supplies organic chemicals and carries on classified research for the Government. So, now I am back on salary and am still able to have some real contacts with ever advancing chemistry, especially in my own field and also able to help my former students get ahead. You see, I am just as stubborn as I was 'way back there in 1915. They told me I should just have to be retired and washed up, so I quietly decided that I would not do it. As evidence that I am still on the move, I plan to attend in August, the Gordon Research Conference at Tilton, N.H., and to present a paper at the Fluorine Symposium of the American Chemical Society in New York in September. Of course, these things require more effort than they would have 20 years ago, but I find much satisfaction in their accomplishment. You see, I am a great believer in the old, old story of the old man of 90, who said to a younger friend of 70, 'Young man, let me tell you that when that little old fellow with the long white whiskers and the sharp scythe comes looking for me, I shall be so busy doing something worthwhile that he will just have to run to catch up with me!' Now, after all, do you not think that this is a pretty good philosophy—for either 8 or 80? My son, Lucius C., graduated in June from North Carolina State in Raleigh and is now working for a civil engineering consultant in Greensboro, N.C. My daughter, Mary, lives in Portland, Maine, and has three children. So, I am solidly a grandpa. Enclosed is a check to "Help Azel" with my best wishes to you and Frances and all my classmates of 1915. Good luck to all!" Now, that's just about the finest and most expressive letter we've had in our column and it's well worth waiting these many years to hear from Lucius. Thank you Lucius and write again.

At his "Forty Acres Inn" at Pike, N.H., in July, **Wayne Bradley** held the National Shuffleboard Tournament with about 300 contestants from all over the country and Canada. I wonder did he have St. Pete green benches for them? In Richard O'Connor's "Courtroom Warrior—the Combative Career of William Travers Jerome" (Little, Brown & Co.), there's a tribute to our **J. Arthur Ball** as one "of a group of Bostonians who developed the Technicolor process." Arthur passed away in 1951. . . . **Bridge Casselman:** "I can't tell you how much Merrette and I enjoyed the Class Cocktail Party and the chance to have a little talk with your charming Frances. We expect to attend these parties as long as we are able." And we also hope Bridge, that will be for a long, long time. . . . **Ray DeLano,** Duxbury, Mass.: "I have been retired for about two years after having been employed in the construction industry for 40 years. My wife and I live here in Duxbury, the town of which I am a native. We have two grown sons, one of whom is a doctor of veterinary medicine, a graduate of Cornell University. The older son was educated at Penn State University and is now in business as a registered land surveyor in Duxbury, and is associated with me. I might add that in retirement time does not hang heavily on my hands. We have five grandchildren." . . . **Otto Hilbert:** "Your 'touching' dues request was awaiting my return from South America. We left in January and reached home in May. We drove to Florida and stayed there three weeks. After four days in Panama, we spent a week each in Santiago, Chile; Buenos Aires, Uruguay and San Paulo. We returned to B.A. for a month and were there during the April 2 trouble which was quite an experience. On our return we stayed in Florida another week and missed the 'nice' winter you had." . . . Ah, me, these 1915 nomads. These notes about our classmates are so important that the story of Fran's and my memorable reunions in Los Angeles and San Francisco with our Fifteeners out there will have to wait until next month. I have a few pictures of the class group at each of our five-year reunions. If anyone wants a picture, drop me a note and I will be glad to send any of them (free) on a first come basis.

It's sad to close this opening column with the record of the passing of several of our classmates. **Burnham E. Field,** X, died May 25 in the Danbury, Conn., Hospital. He had been a metallurgist with Union Carbide Company at Niagara Falls, and had retired recently to live in Newtown, Conn. . . . Dr. **Hymen Freed,** VI, died May 6 in Brookline, Mass. After M.I.T. he graduated from the Harvard Dental School. . . . **John Hyneman,** I, died August 22 in North Miami, where he had been retired for the last several years. . . . **Philip L. Small,** IV, died May 16 in Cleveland, after a long illness. As an undergraduate Phil was active in the Architectural Society, the Musical Clubs, Tech Show and Technique. He was a member of the architectural firm of Small, Smith, Reeb, & Draz and designed many outstanding buildings, churches and houses in the Cleveland area. Of these, he was most proud of the Freiberger Library at Western Reserve University, where he was a member of Reserve's boards of trustees and supervising architects. In Hunting Valley, his home, Phil served as building commissioner and zoning board member. Since his retirement in 1961, Phil had spent the winters in Arizona. Phil had a great sense of humor and wrote me some funny letters with his generous check in his never failing support of the class and M.I.T He is survived by his widow, Grace Hatch Small, a son, a daughter, and six grandchildren. In answer to our letter, Mrs. Small wrote: "Thank you and the M.I.T. Class of 1915 for your letter of sympathy to me and my family. Phil suffered dreadfully from a long illness of emphysema." . . . **Vernon T. Stewart,** X, died June 26 at Mountainside Hospital, Montclair, N.J. After graduating from Syracuse University, he became associated with his father in business in Silver Creek, N.Y. Because of his fondness for chemistry, he entered M.I.T. in our sophomore year. He was head of the Department of Chemical Engineering at Newark (N.J.) College of Engineering, founded shortly after World War I by Allan Cullimore, I, '07. Since his retirement in 1955 he had been a consultant with Wigton-Abbott Company. He is survived by his widow, Helen L. Stewart; two sons, Richard M. Stewart, XVI, '32 and Donald M. Stewart, VI, '64, and three grandsons. Mrs. Stewart wrote: "Your warm words of sympathy are greatly appreciated. Vernon was very proud of his M.I.T. connections and the fact that they are now extended to the third generation. Those undergraduate years were not easy for us, but were most important. Thanks again for your kind thoughts." It's sad to lose these fine men and our sympathetic feelings go out to their families.—**Azel W. Mack,** Secretary, 100 Memorial Drive, Cambridge 42.

'16

Another Reunion, the 47th, has come and gone, and what an outstanding one it was with 43 in attendance at the Oyster Harbors Club in Osterville on the Cape. There had been many promises of a good time by our ever-going president, **Ralph Fletcher,** and our sparkly enthusiast of a Reunion Chairman, **Jim Evans,** and the promises came through! The weather was perfect, the golf course unbelievably good, the cool salty breezes refreshing, and the food deliciously typical of the Oyster Harbors Club fare. Those in attendance were the Bill Barretts, Jack Burbank, the Howard Claussens and son Fred, Dina Coleman from Lexington, Ky., the Dan Comiskeys, the Bob Crosbys, the Theron Curtises, Harold Dodge, the Paul Duffs, Jim Evans, the Ralph Fletchers, the Cy Guethings, the Emory Kemps, the Charlie Lawrances, the Gene Lucases, Bob O'Brien, our worthy hard-working honorary member since way back, Elizabeth Pattee, the Dave Pattons, Izzy Richmond, the Henry Shepards, Francis Stern, Peb Stone, the Hy Ullians and guest Myron Silbert, the Don Websters, and the Ed Weissbachs. A feature which we must note right away was the attendance of **Elizabeth Pattee** from Warwick, R.I. (Fellow, American Society of Landscape Gardeners, Member, American Institute of Architects). This was her first reunion and she is the second coed to come to a reunion, for **Elsa (Habicht) Mueser** attended the 45th. . . . A high light of the reunion was the presentation of a captain's chair to Jim Evans in recognition of the valiant work he has done on reunions. Jim was quite overcome—a complete surprise—he could hardly talk! **Bob Crosby** commented he hopes Jim can keep the chair warm for many years to come.

Peb Stone sent bits for inclusion in our story, so, together with word received by Jim Evans afterwards, we have a number of things to note. We were located in several cottages and many of the gatherings seemed to center at Bogue Cottage, where lived the Cy Guethings, the Gene Lucases, Peb Stone and Harold Dodge. Items: the trouble with the refrigerator in Bogue and Sibyl Fletcher, single-handed, moving it out from the wall to see why; **Cy Guething** and his good supply of what-was-needed to keep the reminiscences flowing; Ralph on crutches but recovering well from his skiing accident in April which didn't prevent him from going right back to the Swiss Alps and sending more of those jolly-raggedy-skiing-bear post cards; **Dave Patten,** a second cripple on crutches, making a double-tribute to the fact that broken legs don't keep 'em from reunions; **Francis Stern** and **Bob O'Brien** really golfing-it with good scores and Francis with his motored golf cart; especially missing were the Barkers, the Brophys, the Leaches, and the Wilsons; **Dina Coleman** had another unusual but top-quality chapeau. The shock of hearing practically on arrival that **Steve Berke** had just passed away; the excellent meals and excellent surroundings; the big reunion banquet on Saturday night mellowed by the extra-special wine that Ralph chooses and supplies for the good of all (judged "excellent" by one of our connoisseurs, **Francis Stern**); discussions of **Rusty White,** his brilliance and his problems, his trip to Florida in W.W.I. for flying instructions, his lecturing in 1938 in was-it-Louisville on the unfinished pyramid of Giza, his book "The Four Gospels"; someone saying to someone else "you never grew up"; the midnight-and-later talk-fest in cottage Bogue; the superb golf course with what-seemed-to-us-to-be underestimates of posted yardage; the outdoor garden gatherings with sunshine of red-nose quality; a telephone visit with **Ed Williams** in North Falmouth; the near-absence of firecrackers; meeting the ladies (all charming) again including two firsts, Frances Shepard and Elizabeth Weissbach; Peb Stone's hole-in-one (he omitted the zero but said 'that's nothing'), and his flight to Boston in Ralph's plane with Ralph, Sibyl, and Dina; **Di Lucas**'s promise to write when we ask **Gene** for news; **Paul Duff** looking so well after his session with something during the spring;

and the pleasant association with the Class of 1913 having its 50th at the same time and place (Bill Barrett tells of talking with Brewster, '13, later on the phone who wanted us to know that '13 enjoyed Jim's stories). In a letter to Ralph, Cy Guething sums up: "'How sweet it was'! That was the best reunion ever by any class. The cottage-type living and private lawn parties is my choice. At our time of life all those niceties are appreciated. It would be difficult to find another location where one is aroused in the morning by the 'bob-white' calls of the many quail, and the crowing of the cock pheasant roosters instead of that noisy alarm clock. And the early morning walks in the woods and over the golf course with **Harold Dodge** was a real added attraction."

Peb Stone reports on Alumni Day, June 10, in Cambridge. Those in attendance were Van and Mrs. Bush, Val and Mrs. Gooding, Al Lovenberg, Merrick and Mrs. Monroe, Shatswell Ober, and Peb Stone. He says: "Morning tours were excellent, especially 'Computer Aided Design' by Steve Coons and 'Magnetic Laboratory' by Dr. D. T. Stevenson. Afternoon, 'Humanities at M.I.T.' very disappointing—poor acoustics at Kresge especially, or maybe I can't hear well enough. Cocktails excellent, dinner also, Pop Concert especially good (Kresge o.k. for that)."

In July we reported the "whys" of some of those who were not coming to the 47th; here are a few more. **Van Bush** couldn't attend because of three-day commitments at M.I.T. and his 50th Reunion at Tufts on the same week-end. **Obie Pyle**'s note of regret indicated that he bet "**Arvin Page** shows up this year." **John Fairfield** had a sister arriving from Australia; also graduation exercises at Rensselaer interfered. **Ken Sully** had planned to fly from Arcadia, Calif.—he even had his reservations—but had to cancel because of the rather sudden death of his mother. **Bill Drummey** was prevented by the appearance of two gentlemen from London "who, on more than one occasion, had done the 'nice and necessary' for me over there—they stayed the week-end." **Mark Lemmon,** in a letter to **Steve Brophy,** expressed regrets; he was just getting his strength back after a gall-bladder operation. Said: "I have noticed Cy Guething's picture in the photographs of the Class reunions, and apparently he has changed as little as anybody I know since 1916. I recognize very few of the faces. . . . You probably know that **Charlie McCarthy** was here for a number of years. I always enjoyed visiting with him and his wife, and I am sorry they moved back East and are living in New York. **Tom Holden** was one of my very best friends, both in Texas and at M.I.T., Dallas and in New York." Mark said he and I saw him frequently, both here in hoped he would be able to get to one of the reunions, also "Kindly give my regards and best wishes to our classmates."

We were really shocked to hear of **Steve Berke**'s death of a heart attack on June 6 in the New England Baptist Hospital. We had had a letter from him dated May 20 saying he hoped his two weeks of recuperation could be spent at his summer place in West Harwich, and "if I am there, I would love to see anyone who wants to make the trip from the reunion —about 20 miles." He was president and treasurer of Berke Moore, Inc., engineers and general contractors of Boston, that constructed a number of complex highways and overpasses, among other things, in and around Boston. As reported by "N. E. Construction" of Lexington, and Boston newspapers: "He was a member of the Class of 1916 at Massachusetts Institute of Technology, its Alumni Council and Faculty Club. He was also a member of the Moles, American Society of Civil Engineers, Boston Society of Civil Engineers, New England Road Builders Association and the University Club. He leaves a wife, E. Louise (Raymond), a daughter Louise of San Francisco, and a son Steven Raymond of Boston, and two brothers, Reynold J. and Mortimer." Steve and Louise have been for many years very-regulars at reunions; in a note she writes: "Will you please put a note in your class notes how very much I appreciate all the many messages from Steve's classmates of 1916. He so very much loved the reunions and looked forward to the 50th." . . . We are very sorry to have word that **Peter Paul Pizzorno** died on May 25 "as a result of a heart condition of several years duration" as reported by his widow from Chattanooga. Peter came to the 40th Reunion in 1956, and was on his way to the 45th in 1961, when he became ill and had to turn back. We will miss him too.

Late in May, we had the pleasure of dining with **Joel** and Virginia **Connolly** in Albuquerque. They were about to terminate their stay in New Mexico and return to Iowa City, Iowa, possibly with a trip to Cape Cod during the summer—we haven't heard for sure. . . . Early last May, **Don Webster** reported that the **Henry Shepards** had called at their Falmouth home a short time before, and that he and Nell were going to dinner that evening with **Jack** and Helen **Burbank** "in Marstons Mills here on the Cape". Says: "we get together every so often." . . . Also back in May, **Pete Mahlman** reported he had enjoyed the "Young Safari Letters" (the story of the **Vertrees Youngs**' 1959 safari in Africa, as written by Sylvia) that we had loaned him and he had taken with him to his son Bill's in Woodland Hills, Calif. Bill returned it with the note: "It was very interesting and inspires me to save my money for a similar experience."

And how about this? In an AEC news release of May 22, we read: "Dr. **Robert E. Wilson,** Acting Chairman of the U. S. Atomic Energy Commission, today announced that a total of 45 U.S. nuclear scientists and engineers will participate in three important technical conferences in Europe over a six-week period on the peaceful uses of atomic energy. . . ." Note: Acting Chairman of the AEC! Again, we understand Bob headed a delegation of 10 atomic energy specialists to a two-day meeting in London, May 28-29, in connection with the exchange of information with their British counterparts. In connection with the trip, he also visited the fast breeder reactor and other facilities at Dounreay, Scotland, accompanied by Sir Roger Makins, Chairman of the United Kingdom Atomic Energy Authority. He also had a meeting with the Danish atomic energy people in Copenhagen, spending the week-end preceding the London Meeting in the Copenhagen area. Keeping more than busy, on June 13 Bob made the official AEC remarks at the Ground-Breaking Ceremony of the Nuclear Fuel Services Reprocessing Plant, Cattaraugus County, N.Y.: "the first private chemical reprocessing plant for nuclear power fuels in the United States—in fact, I believe, in the whole world." Also in June, Bob received his 18th honorary doctorate from Geneva College, where his father was teaching when Bob was born. Congratulations, indeed! We were glad to hear that Pearl was able to accompany Bob on a two-weeks' "island-hopping" trip in July—Bermuda, Manhattan, Nantucket. This was her first trip since her return from Italy and her serious accident last November.

In June, **Ed Weissbach** sent a clipping on a sale "from the Estate of James G. Russell," and wrote: "You remember **Harold Russell;** he was president of the Daniel Russell Boiler Works and his brother, who recently died (M.I.T. '13), was also with the firm. The enclosed clipping about the sale of the plant seems rather sad for I suppose it marks the end of another era." . . . Late in July, Jim Evans reports this sequence from Ralph Fletcher which gives a visual picture: "When it gets to the point where I have to have my shoe laces tied, I'll give up shoe laces. I can still put my socks on standing up, crippled as I am. I just have to lean on something a little bit. If I hadn't had all the practice falling when skiing I might have hurt myself when I fell off the pogo stick. As it was all I got was a nice grass stain on the butt of my nice blue shorts." . . . On July 22, **Jack Camp** called Ralph Fletcher—he was in Boston for a quick stop on his way from Paris to Mexico City—just wanted to say "Hello". . . . The **Steve Brophys** had a month in Europe from mid-June, saw their daughter and son-in-law, military senior aid to the Chief of SHAPE in Paris, and took the North Cape cruise from Copenhagen. . . . Jim Evans reports this word from Don Webster in July: "One of the nice things about being a Falmouthite (retired male) in the summer, is that all the shops and restaurants and theatres are peopled by the most charming, clean-cut, healthy college girls you could ever meet. It helps to keep me young. You know the old wheeze: 'A woman is as old as she looks—a man is old when he stops looking!' "

Now for the **Irv .McDaniels** story whose trip, starting April 24 from Spain, includes extensive travel in England, Italy, Austria, the Balkans and sailing from Genoa October 26 for Los Angeles. We have letters from St. Gervaise and Antibes in France, from Lake Worthersee and Vienna in Austria, loaded with things that make good, and sometimes snappy, reading. In June: "We love England—41 days so far and no rain—liked best

Chatsworth House, Haddon Hall country, and the Trent River. . . . In London, the changing of the guards is impressive and as we were driving back in the Mall, the police stopped us. Queen Elizabeth and the Queen of Belgium passed by us very slowly. Katherine was so close she could nearly reach out and touch them . . . The English are very devoted to their Queen, and the more I see and hear about their form of government, the more favorably impressed I become. . . . One of our best days was at Kew Gardens—the finest botanical garden I have ever seen in any civilized country —3,000 acres. The Tower of London (with Crown Jewels) and Westminster Abbey are musts!" Then a marvelous day at the National Gallery, a day at the races (6 races—I had 3 winners, 2 seconds, 1 third—so you see how easy they were), St. Paul's Cathedral and Madame Tussauds wax works (both disappointments), then the theatre. "The Old Vic is no more; it is making way for the National Theatre. We saw one of their last performances, 'Peer Gynt.' Ibsen wrote 'Peer Gynt' in 1867 as a book—not as a play. Years later it was produced as a play and Edvard Grieg wrote the incidental music (one of my favorites). We saw it the fifth time it was ever played. It lasts four hours, has 24 scenes and should be entitled 'Lust for Women.' No part of it could be shown in the U.S.A. In Scene 3, the troll king's daughter dances to Grieg's music—and what a dance—what bumps and grinds—I bet Edvard turned over in his grave. . . . The only moral I got out of it is that all women are exciting but trolls are even more so." They had an 18-day bus tour through England then drove for 10 days to cover the places they hadn't seen. Wish we could reproduce Irv's description of cathedrals. He says: "Much of England's history is woven around her cathedrals and minsters. In Coventry, the old cathedral is in ruins but it must have been a beauty. Alongside is being built their new Cathedral—the worst monstrosity I have ever seen. I am afraid there are a lot of American dollars in it, and we are not to blame. To me it is decadent and anti-Christ. I resent the large altar-piece made of bent wire to represent Christ on the Cross. It is abstract at its worst! Art, Literature, the Drama, and now the Church. How long and to what extremes is this cycle going? Don't laugh—it may be your church that is next." Leaving England, across the Channel and across the French Alps, Irv writes: "And from all this snow and glaciers we came right smack down on the Riviera where about two million persons were sun-bathing. And you should see the 1963 model bikini. I thought that last year was about as little as the law would allow. How wrong I was. But everyone has to carry a registration card showing that her bikini has been inspected, that it is Sanforized and that it is impossible for it to shrink any more. Of course when I heard that I was greatly relieved." Next month, we'll have some of Irv's lighter findings in Austria and the Balkans.

Bill Barrett, since retirement less than a year ago, has been named chairman of the Planning and Development Committee of Old Sturbridge Village where he has been a trustee for some years. (More about Bill in the next issue.)

Cy Guething tells of hearing from **Ted Jewett** in June. Ted wasn't able to make the reunion. He says Ted is now completely retired and spends practically all his time in the country trimming bushes, weeding, and taking care of a swimming pool which provides entertainment for up to 11 grandchildren each weekend. Ted said he had a bank meeting every week and that they are building a $2½ million addition to one of the buildings at the hospital; that requires a certain amount of time. He urged Cy to stop off at the "Far Horizons" on his return from the reunion if driving back via the New York Thruway. . . . **Phil Baker,** with whom we have had some correspondence on electrical stethoscopes, wrote late in May: "If I don't make Cape Cod, give our mutuals my (and our) kindest regards." . . . In late June, a letter from **Bob Crosby** read: "This will acknowledge receipt of golf winnings from the famous (?) tourney at Oyster Harbors. If I had only seen the Open on TV before our match and profited by watching Julius Boros, Arnold Palmer, et al, I would probably have taken you for 40¢ instead of 30!" . . . **Bill Leach** had an accident in July, fell and broke a shoulder bone, was in the hospital in Niagara Falls for a short time, but according to **Ray Brown,** who visited him, and others who have kept in touch, he is coming along well at his summer place in Youngstown, N.Y.

Vertrees and Sylvia **Young** have been rock-hunting and second-safariing in South Africa—we have a series of 14-so-far Sylvia-letters, that we will call 'The Second Young Safari Letters'—from Cape Town to Springbok and Johannesburg rock-hunting, 10 days safari in Windhoek, S.W. Africa, rock-hunting again to Salisbury, Rhodesia, then a flight to Rome and five weeks on the continent and to London—a total of about four months. Such a wealth of material to choose from—how to choose what! To start, in Cape Town: "What a world this is—more beautiful than any place I've ever seen! Getting out of our car at one spot near the Cape we were visited by a tame zebra who likes to bite people. He was so cute—but a nuisance—as were the hundreds of wicked-looking baboons sitting on great rocks alongside of the roads and climbing on our car when we stopped to look at them. You dare not open the window or door of your car!" To the races: "We picked several winners, so finished the day without a loss and not much gain, except a day of excitement and fun, with wonderful people who are so friendly and gracious to Americans. We laughed over a remark by our Bantu elevator boy. He said: 'We cannot help smiling at Americans, madam, whether we like them or not; they are so smiley!" Dinners, parties, then to see the diamond mines in Oranjemund and to go rock-hunting: "Just over the mountains Southwest Africa begins. . . . Here we found our first good mineral specimens—a bag full . . . We ate lunch that day under an ebony tree—saw no snakes—but big spiders! We visited several mining areas. Unless you have done this you cannot imagine how fascinating it can be. The largest mine was Nouonase. We climbed high, high up to it and entered a fairyland of color. Sparkling crystals—we found green tourmaline and pink rubillite—spodumene, both pink, and grey and green, and others which I have not learned yet! Oh yes, violet lepidolite was another. That was some climb for me—but I was so thrilled and interested I went up like a mountain goat—but came down on the seat of my pants most of the time. I will never forget the sunset that evening." Then: "Wish I could make you feel the strangeness of the country. Nothing very exciting so far about the safari, except it is exciting just living from day to day, hearing the African noises, the jabbering among the Bantus, the sweet Afrikaans speech—seeing the queer names on the stores and road signs. We know we are not in America!" Later Sylvia notes in Austria: "Someday I would like to write a report on 'the plumbing and electrical fixtures of the world—with drawings'!" We hope she does! More anon.

So much for this time. We have letters from others including Messrs. Barrett, Fletcher, Hanford, Rowlett, Stern, and Stone—these will be reported later. In the meantime, keep the paragraphs coming in. If you know of any '16er who is ill, one who should receive letters or cards from some of the gang, send us the information.—**Harold F. Dodge,** Secretary, 96 Briarcliff Road, Mountain Lakes, N.J.

'17

The 1963 interim class reunion at the Publick House, Sturbridge, Mass. on June 7, 8, and 9, brought together the following 1917ers and wives: Loengards, Maeders, Cristals, Tuttles, Gargans, Meloys, Beavers, K. Lanes, Allen Sullivans, Gartners, McNeills, Lunns, Hills, Ray Stevenses, Dunnings, Dennens, Dud Bells. Individuals present were J. Flaherty, Harry Sandell, and Tubby Strout who planned the party and M.C.'d the activities. The Treadway House, about a mile from the Publick House, was 100 per cent at the disposal of the 1917 group and served as the gathering place for cocktails, and for those wishing to enjoy the swimming pool. Since the rooms at the Treadway House were limited, the overflow were housed at the Publick House where all gathered for meals. The meals, by the way, were superb.

On Saturday morning, about 10 golfers started early on a nearby nine-hole course. Very few lived up to the handicaps that they claimed to have established on their home courses, but everybody had a good time. On Saturday evening, the entire group assembled at Treadway House for a social hour and cocktails. The occasion was climaxed with the presentation by Class President **Al Lunn** of a silver bowl to **Loosh Hill,** inscribed as follows: "To Lucius Hill from the Class of 1917—M.I.T., in appreciation of his many years of service as

Class Treasurer, performed with distinction, with devotion, and with humor." Mrs. Hill was appropriately given a beautiful orchid. Loosh and Mrs. Hill posed for pictures before the party broke up for dinner at the Publick House.

The party broke up after dinner Sunday noon. Only a few of the Sturbridge party attended the Monday Alumni Day ceremonies at Cambridge; the Beavers, Dennens, Dunnings, Gartners, Lunns, Ray Stevenses, and Tuttles. They were joined on Monday by Walt Beadle, Ray and Mrs. Blanchard, Ray Brooks, Stanley and Mrs. Lane, and Penn and Mrs. Brooks. The Sturbridge party made a most enjoyable weekend and bought together many (particularly wives) who do not usually attend the Alumni Day get-togethers. . . . The June class notes listed the activities of those 1917ers who have maintained their business connections. For some unknown reason the following were omitted: **D. S. Kendall,** Arlington, Vt., is president of a Machine Moulding Company; **Maxwell Kimball** of Glen Ridge, N.J., continues as an architect; **Tom Meloy,** Falls Church, Va., is chairman of the board of Melpar, Inc., and a director of several other companies.

Loosh Hill's account of an interesting holiday trip down the Mississippi River arrived too late for the summer editions of The Technology Review, hence are being included in these notes. This account generated an idea for contributions of a similar nature from other members of the class covering interesting experiences during their 1963 and 1964 vacations or travels. We will be looking forward to hearing from you. Loosh writes: "Helen and I did take a trip down the Mississippi River with about 185 other people. Six or eight were friends of ours so that bridge could be played when desired. There is one remaining cruise ship called the 'Delta Queen' which sails from Cincinnati, Ohio, on various jaunts from May through November. We took the one to New Orleans and back which stops on the way at such historic places as Natchez, Vicksburg, Memphis, Louisville, Madison, Evansville, Ind., and Cairo, Illinois. At Vicksburg, they have a showboat which was the largest stern-wheeler ever built called the 'something or other' Sprague, and though we were late getting in, the cast put on an old-time show for us called, 'There's Gold in the Hills.' It was exceedingly well done even to booing the villian, crying over the heroine, and throwing peanuts at the members of the cast we did not like. A calliope produced the music by means of compressed air, not steam, which perhaps was a good thing due to restricted quarters.

"We had three days in New Orleans using the boat as our hotel; it was docked at the foot of Toulouse Street not far from the Cathedral, at the foot of the French Section. Appropriate sight-seeing was provided for all while many tried the food at Antoines, Brennans, etc., to the detriment of their figures. To those thermally inclined, it might be noted that both the Ohio and Mississippi Rivers are hotbeds of high capacity electric generating stations. We found the one at Madison, Ind., particularly imposing with three 535-foot stacks, pressure fire rooms, coal handling virtually from mine mouth to boiler room. It was quite a compact little outfit with 3-400,000 kilowatt units running 24-hours a day at about 1,380,-000 kilowatts.

"On both the Ohio and Mississippi, a vast amount of transportation of goods is in evidence 24 hours a day by tremendous tows or barges, which, incidentally, are pushed, not pulled. The modern tow is some 1,200 feet long and the number of thousands of tons of coal, steel, oil, or whatnot, contained is beyond my ability to estimate. The tugs, which are not tugs but pushers, are colossal diesel power plants with excellent living quarters aboard for the crews. It is quite common for such tugs to have four propellers and four rudders, as a result of which quite a push is obtained. Being fairly well versed in piloting and dead reckoning, this writer was tremendously impressed to watch the river pilots swing these very long tows around a tight bend in the river with what I would estimate at an average of two and a half mile current prevailing. We are of the opinion that everyone that can owes it to himself to take the trip. It is an eye opener. We can recommend the good old 'Delta Queen' in all respects except one on this excursion—there was ice on the deck when we arrived in Cincinnati, May the second. Oh yes, we had a race with the 'Belle of Louisville' six miles down river and back, the Delta Queen being the winner, for the Belle had not had time really to get herself in shape."

You all probably received a copy of the four-page memorial pamphlet in memory of **Harold Edward Lobdell** with appropriate remarks in remembrance by J. R. Killian, Jr., '26, and **Ray Stevens.**

Notices have been received of the death of three more of our classmates: **Christopher C. Crowell** of West Dennis, Mass., on June 30; **Stanwood Roy Barrows** of New London, Conn., on July 9; and **Hubert E. Wellcome,** of Weston, Conn., on December 23, 1962. Christopher Crowell was associated with the courses in architecture and mechanical engineering while at the Institute. During World War I he was in charge of engineering calculations and experimental testing of airplanes for the Standard Aero Corporation, of New York. Prior to World War II, he practiced architecture in Boston. During World War II he was chief architectural designer for Lockwood Greene at the Lowell, Mass., Ordnance Plant and later was chief engineer for Bendix Aviation Corp. of Norwood, engaged in the manufacture of marine instruments for the Navy. He was assistant chief construction engineer for F. W. Woolworth Company, and then returned to the private practice of architecture. . . . Stanwood Roy Barrows was employed by General Dynamics Electric Boat Division of New London as supervisor in the Mechanical Design Division until his retirement in 1960. He was an active sportsman, and particularly enthusiastic, since his retirement, about the game of golf. . . . Hubert Wellcome served as lieutenant and captain of Coast Artillery Corps from 1917 to 1920. In his later years, he was active in working on inventions for the armed services.

On April 30 **E. E. Aldrin** received a letter from the American Society of Mechanical Engineers informing him that the council, on that date, elected him to the grade of fellow. Ed says: "This was a great honor and surprise. I did start the Aviation Division of the A.S.M.E. in 1919 with the help of Colonel T. H. Bane, Joseph Steinmetz, Howard Coffin, and E. P. Warner." Ed has a double reason to be proud: At the last M.I.T. commencement, the degree of Doctor of Science was given to Ed's son. This makes both father and son recipients of the degree Sc.D. from M.I.T. . . . The April issue of 'Industry' devoted several pages to the Package Machinery Company of East Longmeadow, Mass., which celebrated its golden anniversary. **Roger L. Putnam,** Chairman of the Board of Directors, is the son of William L. Putnam who, in 1913 was the major financier in the merger of five small wrapping machine companies. For half a century Package Machinery Company has been adding decorative and protective wrappings to products as diverse as candy, paper towels, meat products and frozen vegetables. Machines have been designed to accommodate a host of products ranging from liquid to solid state items. Over the years, a growing attraction has been the versatility of most of the machines to handle different sizes and shapes of products at wide ranges of speed.

William Wurster was one of the faculty members of the University of California who retired in June and was honored with 18 others. He was dean of the college of environmental design and professor of architecture. He was a graduate of the University of California and spent one term at M.I.T. He headed the school of architecture and planning at M.I.T. from 1944 to 1950.

James W. Doon has been general drive chairman of a campaign to raise $300,-000 for New England College. The Manchester, N.H., Union Leader of August 21 shows a three-column picture of college officials receiving a check of $2,000 from the N.E. Telephone and Telegraph Co. Our Jimmie is one of the group. . . . **Robert Gordon Shand,** who is managing editor of the New York Daily News, wrote the following on receiving news of the death of his long time friend S. Roy Barrows: "It is a funny thing; Stan grew up as Roy and I grew up as Gordon instead of the Robert shown on the letterhead. I have not retired and have no immediate plans in that direction. At least I would like to take one more crew out to the national political conventions next year."—**W. I. McNeill,** Secretary, 107 Wood Pond Road, West Hartford, Conn.; **C. D. Proctor,** Assistant Secretary, P.O. Box 336, Lincoln Park, N.J.

'18

"We are here to perpetuate the good friendships that began 49 years ago." Thus, after we had exalted in sunshine

and laughter, did **John Kilduff** open the business meeting of our 45th Reunion. But to begin at the beginning. With an enthusiasm strengthened through a long tradition of devotion to the class, **Pete Sanger** sought out and secured for us a secluded Cape Cod oceanside retreat which was so ideal everyone felt its magic. The Wianno Club, at Osterville, is a private organization so exclusive it is necessary to be sponsored by a member. It offered us every facility in an atmosphere of excellence and good taste. The first arrival was **Granville Smith,** dapper as ever, who flew in from Sarasota, Fla. By late afternoon almost everyone had arrived. They came from all points of the compass except east. Of the 380 members of the class who are still alive, 31 were there; Malcolm Baber and wife, Eli Berman and wife, Carleton Blanchard and wife, Sam Chamberlain and wife, Sax Fletcher and wife, Clarence Fuller and wife, Al Grossman and wife, Pete Harrall and wife, Giles Hulseman, Jack Kennard and wife, John Kilduff and wife, Elmer Legge, Julian Leonard, Harry LeVine and wife, Ned (James) Longley and wife, Alexander Magoun and wife, Ralph Mahoney and wife, Gretchen Palmer, Fred Philbrick and wife, John Poteat and wife, Ed Rossman and wife, George Sackett and wife, Pete Sanger and wife, Al Sawyer and wife, Maz Seltzer and wife, Arthur Smith and wife, Granville Smith and wife, Charles Tavener and wife, Carlton Tucker and wife, Charles Watt and wife, and Theodore Wright.

Saturday vibrated with the excitement and intensity of good friendship renewed on the golf course and at the bridge table. With insured incisiveness and skill, **Carl Blanchard** came away with the low net score of 72. One sceptic wanted to know, "For how many holes?" Close behind in this flurry of competition was **Chink Watt** with a 74. **Johnny Kilduff, Eli Berman, John Poteat,** and **Ted Wright** were in a four way tie for third place, scoring 76 each. This memorable and convincing evidence of our closeness to one another in more ways than one found re-emphasis in the tie between **Jack Kennard** and **Sax Fletcher** for fourth place with a 77, and **Fred Philbrick** tied with **Ned Longley** with a 78. According to what remains of a 47-year-old course in precision of measurements, the weighted mean differences in the joyful efforts of these 10 good men and true was one extra wallop at the ball in 19 strokes. But what mattered more was the crackle and snap of happy words between those who walked and those who hired a conveyance. Nor was the distaff side to be deprived of a rich and memorable experience on a superb golf course. Dolly Berman had the low net of 79. Mildred Watt came in with a carefully crafted low gross of 114. The bridge table was no less colorful and thrilling. Mrs. Watt won this with Mrs. Poteat a close second.

Before the banquet on Saturday evening, all hands joined in a renewal of friendship at the nicest cocktail party which has ever exceeded eager hopes, thanks to Johnny Kilduff who planned it, and to Carl Blanchard who vastly enlivened it with a six-piece orchestra of business friends with whom he often makes music for the entertainment of the New Haven Country Club. Carl even flew some of them up, in addition to having created a tremendous M.I.T. '18 banner as a backdrop. The piano and trumpet players are both executives. The bass viol player is a dentist. The drummer works for a New Haven bank. Behind the clarinet is a man who earns his living with the telephone company. Carl, who is the chairman of the board of a coal company, makes the music go down and around his trombone till it comes out so vibrant and stimulating that even old boys, who had long ago seen earlier days of more wind and less girth, were cutting capers. Some of the wives did the twist with an energy ignoring all possible aches on the morrow. Such was the excellence and beat of the music that, for a moment at least, we all felt untouched by time. Such is the happy experience of perpetuating good friendships that have roots which go back for almost half a century. Blanchard offered a five dollar prize for anyone who could identify a mystery tune taken from one of the Tech Shows. **Gretchen** at once identified it correctly as part of the '17 show, but couldn't name it. She, and others, also insisted that our own **Earl Collins** composed it. Carlton kept his money but revealed that the pulsing rhythm which had tingled our spines so deliciously was the not-to-be-forgotten Technology Rag. Then we sang "Take Me Back To Tech." And who, of the privileged ones who were at that party, will fail to remember the costumes Blanchard also provided: a fancy paper vest, hat, and bamboo cane, making us boys look almost as dapper as we felt; a be-jewelled tiara with plume, lace garters, an imposing rope—or should I say cable—of pearls, and a long cigarette holder for the wives. All this gave them a sense of innocent deviltry, beautiful and tempestuous, which they hadn't felt since high school. Wow! and a dash of "Gee Whiz!"

At the banquet **Granville Smith, Al Sawyer,** and **Giles Hulseman** had to draw lots to decide who should receive the prize for coming the greatest distance. Smith and Sawyer live in Florida, Hulseman resides in Kansas City. Appropriately, the decision was determined by the one who drew the longest piece of paper. With characteristic modesty Al insisted that he was sure Granny had covered more miles than he, but the tribal rite for distance journeyed went to Hulseman, who was as pleased as a happy school boy over the award. Pete Sanger was given a particularly nice billfold as a small token of our appreciation for the loyalty and percipient wisdom with which he has served us, particularly in preparation for this reunion when he was also struggling against the after effects of a major operation. Nor was the place and the date without deep significance to others. Forty years ago this summer **Julie Leonard** had become engaged while at the Wianno Club. Friday was the fortieth anniversary of **Al** and Stella **Grossman's** wedding. **Alexander Magoun** read the names of the 46 classmates he knows about who have died in the last five years, and we stood reverently for a moment in their memory. **Nat Krass** sent a telegram regretting his inability to be with us. Every absent classmate would have done the same, had they realized what a glowing and renewing experience those present were enjoying. Nobody found one thing to criticize—not even the weather. Officers and events had conspired to give us such a good time there were numerous demands that we meet again in 1965, not waiting for our 50th Reunion—unanimously voted with enthusiasm. A vote of thanks was tendered to Carl Blanchard and his friends for their excellent music. Also, an expression of gratitude was voiced to Johnny Kilduff for his outstanding efforts as president. Nobody asked how many have attended every reunion, but certainly Gretchen and Alexander are among the number.

Following dinner, we adjourned to the music room where Selma **Seltzer,** who has been a soloist with the Boston Symphony Orchestra, gave an old piano the most strenuous work-out of its many years in service. Of the three pieces she played, the one probably most suited to the instrument available was a Spanish dance supposed to represent cave dwellers who came out at night to make noisy merriment with the reckless courage of the young. While the ladies waited, those of us who bore the battle marks of M.I.T. retired for a business meeting. Johnny Kilduff pointed out that whereas our tuition was $250 a year, it has now gone up to $1,700. He made an eloquent plea for generous participation in a 50-year gift to the Institute, and pointed out a number of financial advantages available to us. Of these you will hear more from him by direct mail. Fred Philbrick gave his report as treasurer, announcing a present bank balance of $909.66. One of the sassier brothers wanted to know whether he was properly bonded. The secretary was then instructed to cast one ballot for the re-election of the present slate of officers, which he proceeded to do, using for the purpose the inside of the fancy hat Carl Blanchard had donated.

Following the business meeting we all reconvened in the ballroom where Carlton Blanchard and his merry men produced more music, rendered fertile by energies which in some cases suggested that liniment might be a good investment. As an intermission **Fred Philbrick** played the piano accompaniment while Hildegarde, with the heaving bosom of a more professional prima donna, tackled "The Sunshine of Your Smile" and "Un Bel Di" from Puccini's opera 'Madama Butterfly.' On Sunday morning the "good byes" began once breakfast was over. In a little less than two days we had conjured up old memories, including the time some unnamed imp had put a can of beer beside Gretchen's chair in freshman German class. When the hour was over Blackstein (of loving memory) said as the students departed, "Miss Palmer, haven't you forgotten your medicine?" We told each other how proud we are of **Bill Foster,** and how deeply we hope his efforts toward a more peaceful world will

greatly reduce the hysteria men call war. We enjoyed fine, radiant moments of such unusual excellence we wished every member of the class could have shared them and had the memory to cherish with us. Yes, Johnny, we not only perpetuated the good friendships you referred to which began 49 years ago, we had a wonderful time doing it in the usual 1918 superlative style.—**F. Alexander Magoun,** Secretary, Jaffrey Center, N.H.

'19

Jacob Lichter was honored on August 24 at commencement exercises of the University of Cincinnati with the honorary degree of Doctor of Humane Letters. He is president of the Lichter Foundation, Inc., which makes varied types of donations, including scholarship and student loan funds, to numerous educational institutions. He is also a member of the Board of Governors of the Hebrew Union College-Jewish Institute of Religion, on the Board of Trustees of Sheltering Care and Jewish Hospitals, and on the Advisory Board of the Jewish Community Center. . . . **Tim Shea** retired from his position as director and vice-president, engineering, of Western Electric Company, at the end of June. Tim began his career with Western Electric in 1920. He was among the first to be called to Bell Telephone Laboratories newly organized staff in 1924, where he subsequently directed acoustical, optical and electrical work on sound motion pictures from 1929 to 1937. He has been vice-president of Bell Telephone Laboratories, vice-president and general manager of the Sandia Corporation, and in 1957 assumed the position he had at the time of his retirement. He holds the highest honor which can be awarded to a civilian—the Medal of Merit—and a presidential citation for "exceptional services to the submarine forces of the U. S. Navy" during World War II. . . . New addresses: **Lawrence C. McCloskey,** Valley Road, Watchung, N. J.; **Donald W. Kitchin,** 4 Columbia Avenue, Brunswick, Maine. . . . We have just been notified of the death of **Eli Ettlinger** on January 18, 1963.—**Eugene R. Smoley,** Secretary, 30 School Lane, Scarsdale, N.Y.

'20

In recent years the traditional number of classmates at Alumni Day has been, appropriately, 20. I am pleased to report that attendance last June exceeded that number by a generous margin. Among those present were Norrie and Mrs. Abbott, Frank and Mrs. Bradley, Perk and Mrs. Bugbee, Al and Mrs. Burke, Phil and Mrs. Byrne, Al and Mrs. Doe, Lee and Mrs. Thomas, Bat and Mrs. Thresher, Dorothea Brownell Rathbone, Harold Bibber, George Des Marais, Bill Dewey, Jesse Doyle, Witold Kosicki, Scoop Mosscrop, Bob Patterson, Al and El Wason, Frank Badger, Roger McNear, Bud and Eugenia Cofren and Hal and Amy Bugbee.

Frank Bradley, our 45th Reunion chairman, rounded up a few of the faithful for an impromptu and informal discussion of plans for that great event. Locations on Cape Cod and in Connecticut were considered, and Frank is currently investigating them. We will give you full details in ample time for you to make your plans to attend. This will be one reunion you positively won't want to miss and no alibis such as "pressure of work" or "attending children's graduating" will be considered valid this time. Judging from the showing at Alumni Day, this should be our biggest reunion since the 25th. June, 1965, is the time to remember.

T. Carlton Rowen died suddenly while aboard his motor boat in Marblehead Harbor last June. Carlton had retired from his long engineering career with United Shoe Machinery Corporation. His home was at 58 Foster Street, Marblehead, and he leaves his wife, Elizabeth, and a son, Thomas, of New York. . . . We recently learned that **Amasa H. Castor** had died some time ago. His home had been in Manchester, N.H. . . . Another prominent classmate who died last spring was **J. Harold Stacey** of Windsor, Vt. We are indebted to **Norrie Abbott,** (like Harold Stacey, a 33rd degree Mason) for details of his distinguished career. Harold was president of the Stacey Fuel and Lumber Company, a member of the General Assembly of Vermont, State Conservation Board, chairman of the State Government and Finance Commission, Speaker of the House and a member of the State Senate. He had served as a director, Central Vermont Railway, president of the Northeastern Retail Lumber Dealers Association, and director of the National Retail Lumber Dealers Association. He had also served as chairman of the board of directors of All Souls Unitarian Church of Windsor. He is survived by his wife Ethel, a daughter and two sons.

Fred Crapo was awarded an honorary doctor of science degree by Rose Polytechnic Institute, Terre Haute, Ind. Fred is president of the Indiana Steel and Wire Company, and is credited with inventing high strength ferrous conductors for overhead electric transmission lines and for an improved process of galvanizing iron and steel wire known as the "Crapo Process." . . . **Art Radasch** is retiring as professor emeritus at Cooper Union after 25 years as head of the chemical engineering department. He has built a home at 14 Captain Small Road, South Yarmouth on Cape Cod and writes that he "expects to get considerable pleasure from not commuting (from Upper Montclair) and devoting my spare time—if any—to genealogy." For the last school year, Art was acting dean, then associate dean. . . . **Ed Burdell** has been appointed Dean of Rollins College, Winter Park, Fla. President McKean of Rollins says: "Dr. Burdell's coming to Rollins College is new evidence of the attraction of Rollins for distinguished educators. With men of his stature, we can build an institution of increasing importance." Ed writes: "This will be my third and I imagine, my last retirement billet. We have always thought of Florida as a place of ultimate retirement and this gives us an opportunity to engage in interesting activities." (Ed's first "retirement" project was head of the UNESCO Mission to the Middle East Technical University in Ankara, Turkey. His second was as resident consultant to the Cranbrook Foundation, Bloomfield Hills, Michigan.) Says Ed, "the evening program for adults is growing by leaps and bounds, owing partly to the availability of qualified retirees who are being encouraged to qualify for teaching positions in the overcrowded Florida schools." A tip, maybe, for some of our increasing number of Florida retirees.

We hear that **Jimmy Moir** has retired as chief engineer of New England Telephone and Telegraph. Would appreciate word from you, Jim. . . . **Perk Bugbee** has been appointed a member of the Public Health Service Advisory Committee on Accident Prevention, the U.S. Department of Health, Education and Welfare announced earlier this year. According to the announcement, "Mr. Bugbee is a recognized authority on fire prevention and will aid in developing recommendations to the Surgeon General and his staff on plans for development, operation and co-ordination of comprehensive accident-prevention programs within the Service. Mr. Bugbee will bring to the committee knowledge and capabilities gained through over 40 years experience with the National Fire Protection Association of which he is General Manager."

Harold Hedberg, Vice-president of Albany Felt Company, Albany, N.Y., has been made director of corporate services, which includes plant engineering for all plants, paper mill engineering, co-operative work with machine builders, paper mills research centers and others. During the past year, Harold was president and director general of of Ets Postillon et Cie., Riberac, France, a felt mill owned by Albany Felt Company, with which he has been associated since 1924. . . . **Ray Reese,** partner in the Toledo, Ohio, firm of Raymond C. Reese Associates, was named "Engineer of the Year" for the Toledo Area. Ray has lectured on structural engineering at the University of Toledo, served as a member of the Industrial Development Committee and the Education Committee of the Toledo Area Chamber of Commerce, the Advisory Board of the National Bureau of Standards, National Study Committee and National Institute of Building Research, and an advisor to the National Science Foundation. He has received the Concrete Reinforcing Steel Institute Award and the Alfred E. Lindaw Award of the American Concrete Institute. He has authored many papers in the A.C.O. Journal, co-authored a textbook "Introduction to Reinforced Concrete Design" and is the author of the C.R.S.I. 'Design Handbook.' He is a life member of the A.S.C.E., president of the Toledo Society of Professional Engineers and president of the American Institute. Ray lives at 3821 Sulphur Springs Road, Toledo, with his wife, Florence, a son and two daughters. The class sends its congratulations, Ray.

Frank W. Lawton has moved from New York City to Mt. Vernon, N.Y., ad-

dress 445 Gramatan Avenue . . . **Oswald Cammann** is now in Groton, Mass., on Martin's Pond Road. **Stan Reynolds'** present address is 425 E. 86th Street, New York, N.Y. . . . Welcome word is received from **Walt Sherbrooke** just as these notes go to press. Walt, who lives on Staten Island, 49 Margaret Street, has been in the piping business all of his business life, a large part of it with Grinnell Company; then he launched Piping Specialties, Inc., N.Y.C., a sizable operation for design, fabrication and sale of piping accessories. Ill health forced him to give up his corporate interests, but in 1961 he started Walter Sherbrooke and Company, a partnership and manufacturers' agency. Now he is retiring to spend most of the year at 615 S.W. 12th Avenue, Fort Lauderdale, summers at his Staten Island home. Walt has been active in engineering associations, is an M.I.T. Educational Counselor, and New York M.I.T. Club member. He has a son who is an electronics engineer in Boston, another who is a zoologist and graduate student at the University of Arizona, and a daughter at Skidmore. He says he sees **Flossie Fugler Buckland** and **Bob Tirrell** most often of his classmates, others at the New York M.I.T. annual dinners. Best of health and good fortune to you, Walt, from us all.

Welcome word has also been received from **Karl Bean,** who assures me that his removal to 16 Orchard Hill Circle, Bedford, N.H., was not occasioned by retirement although he has that in mind eventually. Karl is chief engineer of Consolidated Rendering Company, near Boston. Karl says he would be pleased to see any of the boys who come up that way. Bedford is four miles south of Manchester. He was kind enough to send me some excellent Polaroid pictures he took at the 40th Reunion. Thanks a lot, Karl.—**Harold Bugbee,** Secretary, 21 Everell Road, Winchester, Mass.

'21

Greetings and welcome to our 43rd year of monthly sessions around the friendly fireside of the Class of '21! Anyone for a game of testing an automobile at 80 miles per hour into a fixed object? Your secretary can report a fair degree of success in an equivalent head-on collision. As a result of this report (and at the risk of incurring **Paul Rutherford's** displeasure), you may wish to rush out and buy another batch of Chrysler shares! Besides our gratitude to the Supreme Being for letting us continue as your class secretary, thanks are also due to the makers of our Plymouth; to our membership in the lucky Class of '21, which has been so completely toughened by the vicissitudes of life before, during and since our M.I.T. days; to the excellent protection of a letter from **Herb DeStaebler,** which was in our coat pocket; and last, but far from least, to a seat belt. Maybe you won't be so fortunate as to have a letter from Herb next time you drive, so our earnest plea to you, dear classmate, is to install a seat belt immediately in every seat of your car and not to leave the safety of your driveway before each passenger is snugly fitted to his own individual belt.

These notes are being written one day out of the hospital, during our recuperative period at our newly acquired sea coast home at the head of the inland waterway at Brielle, N.J. Sincere personal thanks are to be expressed to **Munnie** and Alex **Hawes** and to **Sumner** and Betty **Hayward** for their many notes, phone calls and visits. We ask your indulgence for the brevity of the 1921 column this month and hope you will be patient until we get back home to Glen Ridge and can put into print next issue the happenings which you have been so kind to send us. Another note from you in the meantime will add considerable pleasure to our reporting task. . . . This is a warning notice that the theme for this meeting as well as for every succeeding one (unless the Review editors decree otherwise) will be: "Fasten your automobile seat belt so you will still be around to write to your secretaries!"—**Carole A. Clarke,** Secretary, c/o International Electric Corporation, Route 17 and Garden State Parkway, Paramus, N.J.; **Edwin T. Steffian,** Assistant Secretary, c/o Edwin T. Steffian and Associates, 376 Boylston Street, Boston 16, Mass.

'22

After a busy but relaxing summer, it is really most enjoyable to get back to Class News and a review of the activities of members we have heard from or about. The most interesting events started around Alumni Day in June. Those attending Parke and Madeline Appel's cocktail party included Randy and Fanny Myer, Frank and Mildred Westcott, Minot and Alice Edwards, John Vaupel and Maria Taddia, Clayton and Laury Grover, George and Catherine Dandrow, William and Betsy Russell, Tommy and Janet Thomson, Dale and Katherine Spoor, Warren and Betty Ferguson, Yardley and Ruth Chittick, Dr. John and Eva Wulff, Mr. and Mrs. Irving Abrams, Mr. and Mrs. William Riley, Mrs. Judy Lincoln, Fearing Pratt and Robert Tonon. Your secretary called in from Iowa putting a crimp in his vacation allowance, but apparently having no effect on increasing the A. T. & T. dividend. **Parke Appel** has been elected to a three-year term on the Alumni Fund Board, so you will be hearing from him often. In addition to those noted above, the following attended Alumni Day on June 10: Mr. and Mrs. C. Hall Baker, Fred Dillon, Bill Freeman, Dewey Godard, Chester Greening, Oscar and Mrs. Horovitz, Bill Hyland, Lester and Mrs. Lewis, Hyman and Mrs. Rosengard, Hugh Shirey, Florence Stiles, Ed and Mrs. Terkelsen, Karl Wildes, Ronald MacDonald and Ken Sutherland.

In a letter of regret from **Frank Kurtz** of Delray Beach, he reports on plans for going to Brazil and on to Portugal and Spain, returning early in November. Frank says that he had visits from **Dale Spoor, Bob Tonon, Ros Sherbrooke** and others. His welcome mat still is bright and shiny. Dale Spoor of Richmond reports on a trip to the Orient. Your secretary should have caught up with him in Hong Kong or Manila in May but we missed connections. . . . **Dyno Spalding** has retired from Procter and Gamble and plans on remaining in Cincinnati. He is keeping busy serving on volunteer committees and in general local activities. **George Dandrow** notes his new address as 10 Brooklands, Apartment 1-H, Bronxville, N.Y. . . . **Chuck Brokaw** sends greetings from Denver with a welcome to all the class. . . . Our assistant secretary **Oscar Horovitz** of Newton has been rated as the only five-star motion picture exhibitor of the Motion Picture Division of the Photographic Society of America. Oscar has won 70 awards in national and international competition to date. . . . **Abbott Johnson** has undergone major surgery on both hips in the Harkness Center, Columbia Presbyterian Hospital in New York City. We are all hoping for wonderful results.

Don Carpenter writes that he will be at West Chop on Martha's Vineyard all summer. Portions of the news letter on his retirement on May 31 follow: "Mr. Carpenter's career, which began with DuPont in 1922, has included major assignments in government as well as management positions in DuPont and in Remington Arms Company, a DuPont subsidiary. He has been chairman of the U. S. Munitions Board and deputy to the Secretary of Defense for atomic energy. From 1941 until 1948 he was vice-president of Remington Arms. Mr. Carpenter has been general manager of the DuPont Film Department since it was created in 1950 with cellophane as its only major product. Under his direction the department has broadened its product line to nine films and has opened extensive new markets for films both in packaging and in a wide range of industrial applications. Mr. Carpenter, who has residences at Mendenhall, Pa., and West Chop, Martha's Vineyard, Mass., was born September 24, 1899, in Wilkes Barre, Pa. He attended Phillips Academy, Andover, Mass., and the Massachusetts Institute of Technology, from which he was graduated in 1922, as president of his class, with the degree of bachelor of science and engineering. During World War I, Mr. Carpenter interrupted his college work to attend the U. S. Coast Artillery School at Fort Monroe, and was commissioned a second lieutenant.

"Mr. Carpenter's career with the Remington Arms Company at Bridgeport, Conn., began in 1933 when he was appointed director of manufacture. In 1941 he was made vice-president and directed Remington's greatly expanded manufacturing operations during World War II. In 1945 he was promoted to vice-president and assistant general manager. Mr. Carpenter was assistant chairman of the Small Arms Ammunition Industry Integrating Committee during World War II and in 1947 was a member of the industrial advisory group to the Atomic Energy Commission. He was granted leave of absence from Remington Arms early in 1949 to take an assignment in the office of the Secretary of Defense. He served as dep-

uty to the Secretary of Defense on atomic energy matters, as chairman of the military liaison committee to the Atomic Energy Commission, and as chairman of the committee on atomic energy of the Research and Development Board. Later in 1948, President Truman appointed him chairman of the Munitions Board. When he retired from that post in June, 1949, he received the National Military Establishment Certificate of Appreciation for exceptionally meritorious service.

"Mr. Carpenter is a life member of the Corporation of the Massachusetts Institute of Technology, and a member of its Executive Committee. He has been a director of the Memorial Hospital, Wilmington, since 1955 and was a director of the Wilmington Music School from 1956 to 1959. He was a member of the United States delegation to the Seventh International Management Congress, Washington, D. C., in 1938, the Eighth International Management Congress, held in Sweden in 1947, and to the Ninth Congress held in Belgium in 1951. He is a member of the American Management Association, the American Society of Mechanical Engineers, Phi Beta Epsilon fraternity, University Club of New York, and the Appalachian Mountain, North Mountain, Aurora Gun, and Wilmington Clubs, the Wilmington, DuPont, and Greenville Country Clubs, the Vicmead Hunt Club, and Edgartown Yacht Club." We are sure that Don will be busier than ever spending more time on general welfare activities.

Dr. **Edward L. Bowles** of Wellesley Hills will retire as professor of the Institute to lecture in M.I.T.'s School of Industrial Management on the theory and practice of getting things done. His career has been exciting and constructive, and he is described as "one of the most important behind-the-scene figures in World War II." When he received the Distinguished Service Medal from President Harry Truman, his citation read: "By the clarity of his vision, by his ability to interpret scientific principles into practical application on military tactics, by his effective organizational talent, Dr. Bowles has made a material contribution to the combination of science and skill resulting in the world's greatest Air Force and the destruction of the enemies of democracy." Ed Bowles, because his work with radar allowed almost total destruction of the buzz-bombs in England, was decorated with the Most Excellent Order of the British Empire. He was scientific warfare adviser for the Joint Chiefs of Staff during the war in Korea. . . . **Clayt Grover** called while visiting in Buffalo in June. He reported on a most pleasant visit at Yucatan where he saw **Arturo Ponde Canton,** General Director of Cerveceria Yucateca. . . . We were shocked to receive word in July of the plane crash in Quebec causing the death of **Frederick S. Blackall, Jr.** Fred and Dr. Frank King, Chief of Surgery at Woonsocket Hospital, took off from Seven Islands after a fishing trip in the North Country. Our sincere sympathy goes to his wife Pauline, his son S. Steele, 3d, and his daughter Mrs. Kenneth G. Wheeler. Fred visited the Niagara Frontier in June as director of Textron at Bell Aerospace; he witnessed the test firing of the Bell Agena rocket engine and a rocket belt flight at the Niagara Falls plant.

Your Secretary had a good visit with Bob Tonon and Parke Appel in September at the meeting for Alumni Fund workers. They both report a busy summer and good health. . . . The sympathy of our class is extended to the family of **Dana Sawyer,** of Winchester, retired vice-president of the Federal Reserve Bank of Boston. Dana joined the bank in 1934 and was manager of the Security Loan Department, personnel officer, and later was in charge of the bank's fiscal agency operation. Upon retirement in 1962, he was cited for his outstanding leadership with the U. S. Treasury Department's Distinguished Service Award. . . . We also extend our sympathy to the family of **Donald P. Knight** of Wellesley Hills. . . . Among the new addresses received were those of **Platt C. Benedict,** Tsumeb Corporation, Ltd., Tsumeb, S. W. Africa, and Mrs. **Martha E. Munzer,** Mamaroneck, N.Y.—**Whitworth Ferguson,** Secretary, 333 Ellicott Street, Buffalo 3, N.Y.; **Oscar Horovitz,** Assistant Secretary, 33 Island Street, Boston 19, Mass.

'23

The happy days at Chatham Bars Inn and our 40th Reunion are now behind us. Your new class officers have caught the "glint" in the eye of the 1923 Beaver and are now on the job. All classmates are urged to participate by observing and reporting births, deaths, marriages, wanderings, promotions, writings, community activities and other doings so that your classmates may know where you are and what you are doing. Your new secretary-treasurer will try to maintain the high standard of reporting set by **Herbert L. Hayden,** who has prepared a very fine report on the 40th class reunion which has been mailed to all classmates. Herb says that if anyone has not received a copy he has a few available. . . . First we will get on the beam by reporting changes in address: **Ivan L. Tyler,** The Bunkhouse Lodge, North Scottsdale Road, Scottsdale, Ariz.; **Parker B. Holden,** Starboard Lane, Osterville, Mass.; **Walter H. Newhouse,** P.O. Box 515, Wheatland, Wy.; **Aubrey W. Seels,** Box 1, R. R. 1, Three Oaks, Mich.; **Chaplin Tyler,** Devon Apartments, 2401 Pennsylvania Avenue, Wilmington, Del.; **Alan R. Allen,** 525 Lexington Avenue, New York 17, N.Y.; **Francis L. Cronin,** 137 East 38th Street, New York 16, N.Y.; **Laurence S. McLane,** Papeekeo, Hawaii; **Edward Battey,** 16 Wesskim Wood Road, Riverside Conn.

Charles R. Bailey, assistant comptroller, Minnesota Power and Light Company, Duluth, has been advanced to comptroller. Charles has been with this firm since 1924 as a salesman, district superintendent, rate engineer, statistician, head of the budget and statistics department and assistant comptroller. A long time Scout, he holds the Silver Beaver Award, which is the highest recognition given by the Boy Scout councils to volunteer workers. He is a graduate of Dartmouth College and continued his education at M.I.T. He was born in Gardner, Mass., but has been a Duluthian for nearly 40 years and now lives at 809 Rockview Court. He and Mrs. Bailey have two married sons. . . . **Herbert Barnby** and Mrs. Barnby left right after Alumni Day for London and Stuttgart where they picked up a new car for an all summer leisurely drive around the British Isles and the Continent, including two or three weeks at a friend's chalet near Interlachen, Switzerland. . . . **George E. Barnes** has retired from the Case Institute of Technology, Cleveland, as professor of hydraulic and sanitary engineering and has been named professor emeritus. He has been a Case faculty member since 1933 and head of the Department of Civil Engineering and Mechanics for 22 years; he received his B. S. in civil engineering from M.I.T., his C.E. (honorary) from Case, and his M.A. in Romance Languages from Western Reserve University. While at Case, he has been a consulting engineer on hydraulics and sanitary engineering projects on water supply, sewage, trade waste treatment, flood control and irrigation for industry, the federal government and various state governments. During the summer of 1962 Professor Barnes served as consultant to the Pan American Sanitary Bureau of the World Health Organization in Caracas, Venezuela, where he counseled the Venezuelan National Institute of Sanitary Works on the development of plans for water supply and treatment for the Caracas metropolitan district. In 1961 he served as visiting professor of Sanitary Engineering at Central University of Venezuela, where he taught the University's first graduate course in sanitary engineering to a class of professional engineers employed by industry and government agencies. The course, covering industrial wastes, disposal, and sewage treatment, resulted in Professor Barnes being given a special citation by the University for his contribution to its program. He has also served as consultant on sanitary engineering and hydraulics to agencies in Argentina, Honduras and Nicaragua, and has lectured at the University of Buenos Aires. He is a member of the American Society of Mechanical Engineers, the American Institute of Consulting Engineers, Life Member of the American Society of Civil Engineers, member, the American Society for Engineering Education, American Water Works Association, Federation of Sewage Works Association and the National Society of Professional Engineers. Professor Barnes has accepted an appointment at the University of North Carolina, which was effective July 1, as professor of sanitary engineering in the School of Public Health. He will be concerned with the graduate program in public health for foreign students.

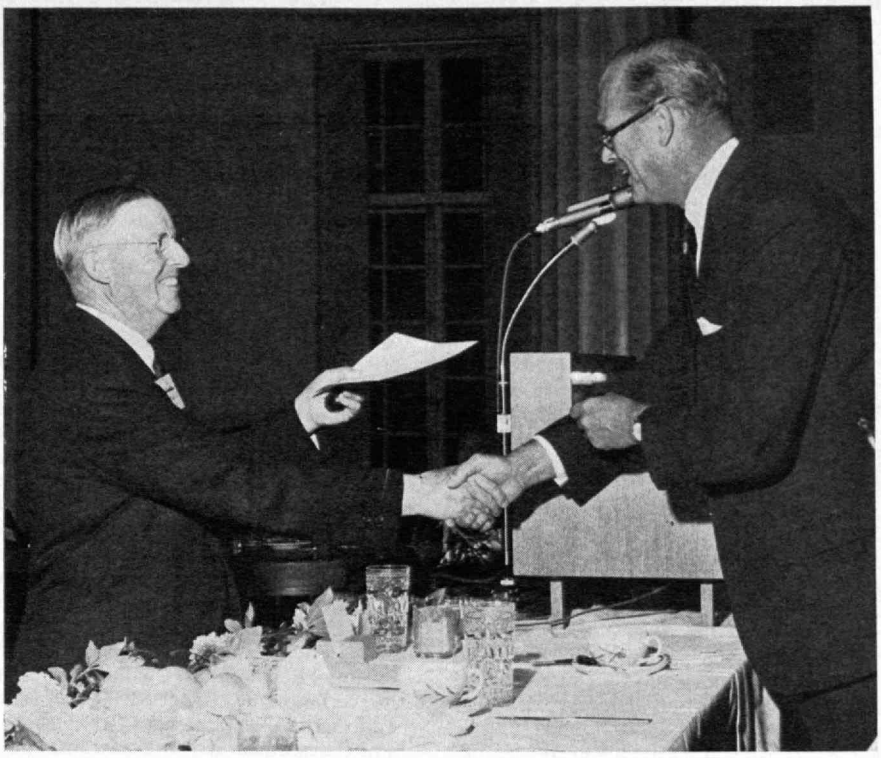
In a letter received too late to be read at the reunion Mrs. **Sten (Anna) Branzell** writes: "With hearty thanks for all tempting letters concerning the reunion, I want to send you my best wishes for very very

successful days! Alas, for me the distance is too great. But, in case anyone coming might be interested, I want to give you a few personal details: I have resigned from my work in the City Planning Department of our city; and I was left alone in 1959, when my husband, the city architect Sten Branzell, died. I am at present busy taking up various things that time did not earlier allow. Besides, I am collecting grandchildren, six by now, and am co-operating with Mrs. Maude Muller of 'Art for World Friendship' in Media, Pa. We deal in children's drawing exchanges around the world, and I serve as Swedish contact 'man,' which gives me a good deal of work but a corresponding amount of fun. Hoping that any old friend who might happen to come to our country will not forget me, I am yours, Anna Branzell (formerly Anna Mohr from the Department of Architecture), c/o Dr. Heymans, Str. 7, Gothenburg, Sweden.

Henry Belin duPont retired in May as a vice-president and member of the Executive Committee of the DuPont Company, offices he has held for 24 years. He will continue as a member of the company's board of directors and remains as president of Christiana Securities Company. Mr. duPont, a great-great-grandson of Eleuthere Irene duPont de Nemours, founder of the company, has been prominently associated with engineering research and development during his 35 years with the firm. He joined the company as an assistant treasurer in 1928 after five years of business experience elsewhere. He was transferred into the engineering department with DuPont and for several years was head of the Technical Division of the Engineering Department. In 1934 Mr. DuPont was elected a member of the board of directors, and in 1938 he became assistant to the president, Lammot duPont. The next year he was elected a vice-president and member of the Executive Committee; he has been the adviser on engineering activities since that time. He has long been interested in engineering education and has spoken before many educators' groups to emphasize an appreciation of the liberal arts in preparing for careers in industrial technology. He was awarded the honorary degree of Doctor of Science by LaSalle College, Philadelphia, in 1953, and Doctor of Laws by the University of Delaware in 1960.

Mr. DuPont was born in Wilmington July 23, 1898, the son of Henry Belin and Eleuthera Bradford duPont. Following preparatory work at Pomfret School in Connecticut, he attended Yale University, graduating with a B.A. in 1920, and continued his education at M.I.T., studying mechanical and aeronautical engineering for a B.S. in 1923. Mr. DuPont is active in educational, charitable and community work.

According to the alumni magazine of the University of N.H.: **"Harland C. Forbes** has often reflected honor upon his University (University of N.H.) since graduating in 1921. Recently a chair in the Whittemore School of Business and Economics was named for him—the Harland C. Forbes Chair in Management.



David W. Skinner, '23's Reunion Gift Chairman, was one of those cited for "notable fund accomplishments" at the Alumni Fund Conference. Above, Horatio L. Bond, '23, accepts the citation for Mr. Skinner from Robert H. Winters, '33.

"Mr. Forbes was born in Colebrook, N.H., on February 21, 1898. He was graduated from Colebrook Academy, then attended U.N.H. After receiving his B.S. degree there in 1921 he was an instructor at M.I.T. while he was working on his M.S. degree in Course II. He then joined the staff of Western Electric Company, and in 1924 accepted a position as assistant to the chief electrical engineer with the N.Y. Edison Company and its successor, Consolidated Edison. During his years of progress at Edison, he held various positions. As systems engineer and later as executive vice-president, he was largely responsible for the consolidation of Consolidated Edison's gas, electric and steam engineering and for long-range planning. He directed the company's post war expansion, was named president in 1955 and two years later became chairman of the board of directors.

"He has extended his interests to include other activities, including trustee of the New York Savings Bank, Director of the Consolidated Telegram and Electric Subway Company, fellow of the American Institute of Electrical Engineers, member, Society of Gas Lighting Engineers, and director, Erie Lackawanna Railroad and WDNT-TV, Channel 13, New York's educational television station. Mr. Forbes also holds memberships in the Pinnacle, Manhattan and Creek Clubs. . . . In 1960, the University of New Hampshire conferred upon him the honorary degree of doctor of engineering. Mr. Forbes married the former Frances I. Ramson in 1928; they have two sons, Howard R. and Barton A., both of New York. The Forbes live at 71 Bellows Lane, Manhasset, N.Y."

F. G. Harmon (Frosty) reports that the heart spell which kept him from the 40th Reunion seems to be well under control and that he expects to die of senility at about a hundred. He has recently been elected chairman of the board of Tubesales. . . . **Donald W. Height,** is retiring after serving as business officer of Wellesley College for 25 years. He has served as business manager, assistant treasurer, and controller. . . . Mrs. **Wolcott A. Hokanson,** wife of an honorary member of our class, made and gave to each member of the class who attended the 40th Reunion at Chatham Bars Inn, a small Beaver mounted on a square mahogany base with the figures 1923-1963 appearing thereon. We take this opportunity to again thank Mrs. Hokanson for this pleasant reminder of a very happy reunion. . . . **William S. La Londe, Jr.** reports that four grandchildren have been added to his son's and daughters' (3) families. His home address is 77 Jefferson Avenue, Short Hills, N.J. He has been active in the American Society of Civil Engineers (past national director), American Society for Engineering Education, and the American Society of Electrical Engineers (as an officer of the Civil Engineering Division). Last year he was retired as a captain in the civil Engineering Corps of the U.S. Navy Reserves, after 25 years of reserve time and five years on active duty during World War II. He and Edward S. Sheiry, '24, I, are getting out a new revised third edition of Ed's book "Elements of Structural Engineering." William is author of "Professional Engineers Examination Questions and Answers" and editor-in-chief of a "Concrete Engineering Handbook." . . . **Edward McSweeney,** a vice-president of Perkins Goodwin, is a recognized man-

agement consultant in the pulp and paper and printing industries. For over 10 years, he has been pinpointing for 'Pulp and Paper' readers some of the more aggravating problems facing top management. He has written an interesting article on "Middle Management," which appears in 'Pulp and Paper,' June 24, 1963, issue. . . . **Clarence J. Odell,** has been honored by the Babcock & Wilcox Company for his 40 years of service. He joined the firm at its (former) Bayonne, N.J., Works after receiving his degree. After assignments at Bayonne and the New York City office, he was transferred to the boiler division headquarters at Barberton, Ohio, in 1958. In 1961, he was named manager of the pricing section in the newly established marketing department. Clarence and his wife, the former Martha McGrath of New York City, reside at 2567 Thurmont Road, Akron, Ohio.

Our new class president, **David W. Skinner,** Vice-president and General Manager of the Polaroid Corporation, has been made a member of the Associated Industries of Massachusetts Advisory Committee on Human Relations. . . . **Robert C. Sprague** is mentioned in the 'Investment Dealers Digest' as present chairman and chief executive officer of the Sprague Electric Company, North Adams, Mass., a leading manufacturer of components for the electronics industry. . . . Those of us who met **W. L. (Bill) Stewart, Jr.** again at the 40th Reunion, are grieved to learn of his passing on August 30, at Good Samaritan Hospital, Los Angeles, Calif. In addition to being a life member of the M.I.T. Corporation, a clipping forwarded by F. G. Harmon comments on only a small part of the many things in which Bill was interested. He was chairman of the board of Union Oil Company of California. He lived at 1870 E. California Boulevard, Pasadena, was the third generation of his family to rise to a top-level executive position with the company. He was associated with Union Oil for 49 years. He was named to the board in 1926, executive vice-president in 1942, and chairman last year. He was a native of Santa Paula. He was an Army flying cadet in World War I and a Coast Guard Reserve commander in World War II. He was a director of the Stanford Research Institute, life director of the American Petroleum Institute and a director of the Robinson Building Company. He is survived by his wife, Julia Valentine, daughter, Mrs. Margaret Bricker of Wayne, Ill., and a son, W. L., 3rd, of San Rafael.

In 'Forbes' Magazine for August 15, 1963, **Uncas A. Whitaker,** Chairman and founder of AMP, Inc., of Harrisburg, Pa., explains the secrets of his firm's fantastic growth in the crowded electronics market. . . . In a recent letter, **John H. (Jack) Zimmerman** writes: "You may be interested to know that I have just returned from a trip around the world; it was necessary to call on some steel mills in the vicinity of Calcutta, India. In preparing my transportation, I found that it was within a few dollars of the same cost to continue right on to the east around the other half of the world as compared to returning back through Rome and Paris to New York. I did this accordingly with very interesting stops at Bangkok, Hong Kong, Tokyo, Honolulu and back to the U.S.A."—**Forrest F. Lange,** Secretary, 1196 Woodbury Avenue, Portsmouth, N.H.; **Bertrand A. McKittrick,** Assistant Secretary, 78 Fletcher Street, Lowell, Mass.

'24

Greetings again as we start another year, a big year, culminating next June in our 40th Reunion. You will be hearing about it in increasing detail as time goes on from **Cy Duevel** and his committee. You'll also be hearing from **Ray Lehrer,** our Reunion Gift Chairman, **Gordon Billard,** and others who are out to make our gift an outstanding one. With the past examples of 1922 and 1923 we have a real job ahead of us. . . . Biggest and best feature story we have seen recently about any of our classmates was in the August "Boston," the Chamber of Commerce magazine. Headed "The Amicable and Admirable Armenian," it is the life and times of **Sarkis M. Zartarian,** and if you can get hold of a copy it's well worth reading. It's too lengthy even to brief, but the essential data are these. At the age of 15, Zark came to this counry with no English and entered the first grade in a school in Cambridge. In 3 months he was an 8th grader. The other students called him "Papa." After that came a bit of high school and a few odd jobs. Then the Mexican border trouble began, and off he went with the Signal Corps. When his outfit left for France, Corporal Zartarian was with them. He went through all the major engagements the Yankee Division was involved in and stayed on in the National Guard. After World War II he was retired as a brigadier general.

Although Zark was accepted at Harvard, he preferred M.I.T. even though he had to go to Huntington School for a bit before he could get in. After M.I.T. he got a bachelor of laws degree at Northeastern, then a master of law degree at B.U. Without detailing his business career, which has been varied, let us just say that at present he is president of Peters and Company in Boston, making and installing stainless steel food equipment. He is so busy with this and civic obligations that he doesn't have time to enjoy his 60-foot cruiser more than once or twice a year. Of course another reason may be, as he told us at our 35th Reunion, that his wife, Rose, doesn't like the sea.

The only business change that has come to light recently was that **Vincent E. Lysaght** was elected a vice-president of American Chain and Cable Company in May. Vin has been general sales manager for some time. He has made quite a name for himself in the field of microhardness testing. . . . There is a new president of the George Eastman House, Rochester's museum of photography. It's **Cyril J. Staud,** Vice-president of research at Eastman Kodak. . . . We have a clipping that **Mart Buerger** has been traveling again, but this is hardly news. He was about to leave for Switzerland when we last saw him. The clipping said he had led a symposium on crystallography with a distinguished sounding group of international cohorts. Unfortunately the fragment that came to hand didn't say where it was held.

A couple of second generations weddings. "'55 Debutante Engaged to Marry Graduate of Harvard and M.I.T." was about Miss Lois Haase of St. Louis who was to marry Jan William Mares, '60, of Dickinson, Texas. Some of you met Jan at the big Waldorf dinner last May. He was there with his father, **Joe Mares.** . . . And the second announcement came in a letter from **Griff Crafts.** "Anstice (their youngest daughter) will be married on September 7. Wedding preparations have kept everyone busy (I wish to Hell she'd elope) to the point of frenzy. However, she is marrying a charming and brilliant young man, Alexander Von Ganske, who is taking his Ph.D. in chemistry at Heidelberg University. She is also a student there." Hope Griff was able to hobble down the aisle becomingly. Early in the summer he broke a bone in his left foot, and it was in a cast for quite some time.

Bishop **James C. L. Wong** had quite a tour. He had lunch with **Gordon Joyce** and **Fred Ashworth** in Boston, but unfortunately **Ray Lehrer** and your secretary didn't make connections. Starting in San Francisco where he spoke to the Episcopal Church Women of St. Mary's-by-the-Sea Church, he crossed the country to the annual conference of Long Island Episcopal clergy, preached in **Dent Massey's** church in Point Edward, Ontario, and ended up at the Anglican Congress in Toronto where he received a Doctor of Divinity degree from Trinity College. Borneo should seem rather dull after all that—or maybe it will be a welcome relief. . . . **Richard F. Shea,** long-time General Electric engineer, retired on October 1. For the last few years he has been a consulting engineer to G.E.'s Knolls Atomic Power Laboratory. On September 25 Dick was given a big send-off by his associates, and your secretary sent greetings and well wishes from the class. He will continue to do electronics consulting and hopes to have more time for writing. At present he is editing an amplifier handbook. Considering the rapidity of changes in his field, it should be a full time job just keeping books of this sort updated.

There was a good turnout at Alumni Day last June, 12 in all with a half dozen wives. The only classmate other than your secretary at the Alumni Fund Conference in September was **Bill Correale.** Ray Lehrer would have been there, but he had a most unfortunate accident a short while before, losing three fingers of his left hand in a planer. The only redeeming feature is that Ray is right-handed. . . . The First Alumni Seminar in September was a smash success. For three days more than 200 Alumni and their wives heard Van Bush, Doc Lewis, Norbert Wiener and a galaxy of other stars on a variety of esoteric subjects. The **Andrew P. Kelloggs** were there, and

Max and Bertha **Ilfeld** came on from Albuquerque. They all felt well repaid. There will be more of these in the future. Keep them in mind.

We learn from the Phillips Exeter Bulletin of the death of **William D. Rowe.** You will remember Bill as a track star and also as general manager of VooDoo. He went to Washington in the mid-30's, and during the war was with the Federal Works Agency. There was a saying at the time: "if you want space anywhere in Washington, you have to see Bill Rowe." In recent years he has been on foreign duty with the Agency for International Development. His last post was in Rhodesia. Bill returned to Washington last fall and died there of a heart attack on June 3. . . . On this unhappy note we end our first effort of the year. Don't forget reunion, our class gift, and if your secretary is so fortunate as to be on your Christmas card list, do add a little note for this column.—**Henry B. Kane,** Secretary, Room 1-272, M.I.T., Cambridge 39, Mass.

'25

First and foremost in our mind for this issue of The Review and for future issues through June of 1965 will be the 40th Reunion planning. **Dave Goldman** has agreed to be the reunion chairman. Fred Greer, Ave Stanton, Ed Kussmaul, Mac Levine and yours truly have already had two meetings and reservations have already been made at a point which promises to be a fine reunion location. It will be at the Trade Winds Inn at Craigville on Cape Cod, a modern inn with fine facilities, easily reached by air transportation or by automobile. Be sure the reunion in June of 1965 is put on your calendar at once. The dates will be June 11, 12 and 13, to be followed by Alumni Day as part of the reunion on Monday, June 14, 1965. An important part of our Alumni Day in connection with the 40th Reunion is the presentation of a class gift. **Sam Spiker** and **Mac Levine** are co-chairmen for the 40th Reunion gift, strongly backed up by **Chink Drew,** our class agent. All of you will be asked to give, and many of you will be asked to work on this project. More information regarding the gift and the reunion plans will appear in the class news from month to month.

A report on those who were present at the 1963 Alumni Day is needed to close the record on that year. During the course of the day the following made their appearance: Henry Bacon, Willard Gardner, the Dave Goldmans, Fred Greer, the Bob Hodsons, Jim Howard, Ed Kussmaul and his son Wesley, the Mac Levines, Ed McLaughlin, Sam Spiker, the Ave Stantons, and the Doc Fosters. It was a most enjoyable day and more of you should plan to make it an annual event. . . . There have been many interesting notes and articles in the newspapers, and these will be reported on in the near future. Several items must appear this month. First of all it was interesting to note that at the graduation exercises of Bradford Durfee College of Technology on June 2, **Ben Hampshire** was given an honorary Doctor of Humane Letters degree. Ben is vice-president, general manager, and director of the Montaup Electric Company in Fall River, Mass., a member of the Technical Liaison Committee of the Yankee Atomic Electric Company, a member of the board of trustees and of the corporation of Truesdale Hospital and president of the M.I.T. Club of Fall River. . . . Through the M.I.T. Placement Bureau, I find that **H. E. Weihmiller** is now located in Bethesda, Md., and is set up as an aerospace consultant in the fields of astronautics, aviation, air transportation and related activities. . . . **Myron Doucette** wrote me a note giving a new address at 66 North Road, Setauket, Long Island, N.Y., Box 333. He has made this move upon retirement and tells me he will give me more up-to-date information later on. . . . **Bed Groenewold** wrote me some time ago to assure me that although he has moved from Tulsa, Okla., to Sarasota, Fla., he has not retired. He finds it just as easy to operate his business from his place in Florida.

During the past several months, notification of several deaths has come to my attention, and it is my sad duty to report them to you. On May 23, 1963, **Albert M. Stolte** died in Huntington, Long Island. For the past 38 years, he has been with the New York Telephone Company, serving as staff superintendent for the last several years. . . . Word has also been received of the deaths of **Karl T. Nilsson** located at Morristown, N.J., and **Arthur J. Nakos** of Nashua, N.H. No date of their passing is yet available. . . . Many articles appeared in the Boston papers on June 4, 1963, reporting the sudden death on June 2 of Colonel **Henry (Chet) Trask.** Chet was well known to most everyone in the class, and I am sure all of you join with me in expressing the sympathy of the class to his wife and four daughters who survive him. Chet was well known as a demolition expert with the Army. He studied at Harvard and Tufts, as well as M.I.T., and during World War II was a liaison officer to the Royal Engineers. Prior to being sent to England, he was in charge of the construction of the harbor defenses at Portsmouth, N.H., and later supervised construction work at Claiborne, La. He became a specialist in the instruction of American soldiers in the avoidance of "booby traps." Chet founded Trask Engineering Corporation and served as its president for a number of years prior to his retirement two years ago.—**F. L. Foster,** Secretary, Room 5-105, M.I.T., Cambridge 39, Mass.

'26

Tomorrow my commuting from Pigeon Cove stops for this season and we move back to town. All day I've been cleaning out "stuff" and tonight instead of writing class notes I have been poring over a copy of the Gloucester Times I found dated April 12, 1915. The price, one cent. A liquor ad by a store that is still in existence shows a bottle of Old Maryland Pine Rye—one dollar full quart, fifty cents full pint, twenty five cents half pint. A picture of a youngster is entitled, Master Leroy, eight year old soprano who sang at Children's Concert. The guy is now a paunchy, bald, chain smoking local innkeeper. "The Perils of Pauline" is showing at the Olympia. On page seven there is a long letter by Dan Bloomberg's father to the editor challenging the ex-mayor to a trotting race along a section of Gloucester called the cut. The ex-mayor had made some remarks about the inability of Mr. Bloomberg's horse to run and touched off an old controversy. One of the present reporters of the Gloucester Times informed me early in the summer that Dan's father, a fine old gentleman, had passed away a few months previous. . . . I must now put away my crumbly newspaper and get at the notes. I have a sheet of paper dated July 12 with sketches of two boats. Joe Burley, '27, and his wife, Ruth, came into the harbor that day and I had my first look at the "Flying Gull," their 38-foot cruising sailboat. I had heard about it when it was being built in Holland a few years ago and was happy to see the craft. The sketches I am looking at explain the advantages of the design of his boat which has a reverse shear and is known as a 'controversy.' With the mast stepped on deck and with this design there is a tremendous amount of room in the cabin. I really liked the boat—the Scotch he had aboard was O.K. too.

A June note from **George Edmonds** expressed his regrets at not being able to join us for Alumni Day. One of the real milestones on this day was **Bob Dawes'** father's attendance. He was there for his 65th Reunion! . . . I have another note —this one dated July 22—on which evening I received a phone call from **Bill Walworth** who was stopping at an inn in Gloucester but who did not heed the class secretary's perpetual invitation for classmates to drop by and say hello. We were very happy to hear from Bill. Over the phone I would have sworn I was talking with **Louis Darmstadt**—even the conversation was similar. Bill, who has been with Reo Motors for many years, reports he is now "taking it a little easy" and is doing some consulting work. . . . Edward B. Rowe, '06, mailed us a clipping telling of the death of classmate, **Arthur R. Tichnor,** head of a Boston publishing firm, Tichnor Brothers. For the class your secretary sends sympathy to Mrs. Tichnor and his family.

Old boy **Ben Howe** from Denver has crashed through with his annual letter: "Dear George, I've been the busiest retired man! **Frank** and Mary **Schreiner** stopped here three or four days and we had a reunion of our own the first of June. We celebrated with my Mexican Bacardi rum, and one night at 9:30 or 10:00 P.M. we called an old classmate in Florida—I can't think of his name now—and sang him a song over the telephone. He is the tall, slender chap who plays the banjo. We forgot it was three hours later there. Guess we got him out of bed. Frank and Mary had been on a trip to Canada and the Northwest, and they were on their

way home to Ohio. My wife and I have been gypsies since I retired in November, 1959, living in a 28-foot Traveleze trailer. We rent out our home and spend the winters in Mexico, springs and falls in Tucson, Ariz., and summers here in Denver. I carry a 14-foot aluminum boat on top of my International station wagon, a 10 horsepower motor inside and keep loaded with oil, canned goods, folding chairs, etc. We go 2,000 miles due south of here to Manzanillo, Colima, which is southwest of Guadalajara on the Pacific. There are two trailer courts on the beach, six miles north of town, hookups to electricity, sewer and water and lots of shade from coconut palms, premaveras and nut palms. The coldest the water (ocean) got last winter was 75°F. Fishing is marvelous—maid service full time, $4.00 per week; rum $1.25 per quart. Cut banana stems from trees in your back yard. I found four good chess players in our park last winter and then had time for only one swim per day. I have ordered a big mobile home, 10 feet x 51 feet which is being built in Elkart, Ind., and will be delivered in Tucson in September. My address there will be Double R Ranch, 1535 W. Roger Road, Tucson, Ariz. We will be there the latter part of September. I have not received any Technology Reviews this year, although I sent in my regular annual contribution last May. And another thing! When you chaps arrange for our 40th Reunion, please consider a warm place (not the Cape). Why not The Bahamas? You New Englanders know the best places there and could arrange a two week's meeting or a month there before Commencement at M.I.T. I once suggested Acapulco, Mexico, but it is a long way from the East Coast where most of our classmates live. This is a nice trailer park here, built last year by a Phoenix, Ariz., corporation; 468 connections with all paved streets, off street parking and not crowded. The club house has two card rooms, reading room with colored TV, billiard room, a big coin laundry and a huge ballroom, square dancing twice a week, bingo, etc. Also a heated swimming pool and shuffle board courts. We plan to keep our travel trailer to come here summers and Mexico for a few months in winter. Best personal regards. Ben V. Howe, '26. P.S.: The banjo player's name is **Ray Mancha."** With that letter from Ben we have used our space for this issue. A letter from you too will be real welcome.—**George W. Smith,** E. I. duPont Company, 140 Federal Street, Boston, Mass.

'27

With the summer coming to a close, a lot of material has accumulated for the November class notes. First, I want to mention that my search for the Techniques and the Freshman Gray Book has been successfully concluded. **Bud Fisher** has crashed through nobly in sending two 'Techniques' and the Gray Book from his library Be it hereby known that these are on loan from Bud and remain his property. Incidentally, Myron Doucette, '25, who sent me a 1924 Technique, has advised that he is off the retired list, having gone to work looking after the scientific equipment at New State University near Setauket, Long Island. . . . **George Bergman** has retired from the Joy Manufacturing Company and returned to Knoxville. His address there is 7809 Corteland Drive. He brings us up to date as follows: "After being exposed to Knoxville for about 10 years we really liked the country down there. The climate is as good as you get anywhere—very little snow, not too hot in the summer. We bought a house with about half an acre. I am kept pretty busy, taking care of a rose garden and a flock of flowers. It is not too much, so that we can pick up and take off whenever we wish. We are both enjoying the best of health. I hear occasionally from **Bob Wise** and **Tommy Russell.** Tom spends his winters in Naples, Fla."

I quote the following mostly from "Public Power": **"William K. Cave,** an engineer in the office of Lieutenant General W. K. Wilson, Jr., Chief of Engineers, U. S. Army, has been awarded the Department of the Army Exceptional Civilian Service Decoration, highest award that can be given by the army to a civilian employee. The citation said that his leadership as chief, Electrical and Mechanical Branch, Engineering Division, Civil Works Directorate, Office of the Chief of Engineers, " 'together with his outstanding technical skill, have been the contributing factors in effecting savings of approximately $21 million in the design and development of hydroelectric power units.' " Bill prepared at Dalhousie University, entered M.I.T. his junior year, stayed on for his master's degree in Course VI-A. . . . **Bill Taggart,** Executive Vice-president of Dewey & Almy Chemical Company, and already an Alumni Association member of the M.I.T. Corporation, has been nominated for a new five-year term. . . . More honors for **Bob de Luccia,** Vice-president of Pacific Power and Light Company. He has won the George W. Goethals Medal, the highest award for engineering achievement offered annually by The Society of American Military Engineers. The citation especially refers to his part in the formation of the Rocky Mountain Pool. . . . The 1963 Harold C. Chapin award of the American Association of Textile Chemists and Colorists has been given to **J. Robert Bonnar,** director of industry relations for General Aniline and Film Corporation. The AATCC has asked Bob to serve on no less than 26 committees since 1927, and let us not doubt that he served well on all of them. . . . And speaking of loyalties, **Glenn Jackson**'s part in running 1927 reunions hasn't been enough for him. He turns up as chairman of Exeter-1923 40th Reunion. Ed Burgess, Joe Burley, Larry Van Mater and P. C. Eaton also attended the event. Ray Hibbert, Dike Arnold, Bill Taggart couldn't make it. P. C., who is Dean of California Tech, came on as his son was graduating from Exeter. Glenn says of himself: "Just wasting away during the day in a dye and print works that has to evaporate tons of water every day; gives the air outside the plant a wonderful feeling." . . . The Public Works Commissioner of New York City will commission **Edward D. Stone** as architect for the coordinated design of the New York Civic Center.

Word was received from the Institute that **Phil Darling**'s address was changed to 3614 Griggs Road, Apt. G9, Houston 21. Before I had a chance to write to find out what had happened, Phil wrote: "The oil industry suffered another blow on June 1, when I followed in your footsteps and asked for early retirement from the American Oil Company after nearly 30 years of very enjoyable service. The extreme cold in the Chicago area bothered my heart condition so I took off for a warmer climate and less demanding job. Dora and I have a small apartment 'back home,' close to our two daughters and three grandchildren. I am starting to look for a part-time job of some kind to give me something interesting to do. Actually, we have had no problem in keeping busy as we know many people in Texas City, where I worked prior to 1960. **Bill Kaplan** is still living in Park Forest, Ill., and is still with American Oil. They gave me a whale of a retirement party in which Bill played a considerable part with his camera. He unearthed snaps taken back in school, one of the gang when we were at the ROTC Chem Warfare School at Edgewood Arsenal, Md., in 1926. It is a very glum-looking crew. We were confined to quarters on account of a slight misunderstanding with the top kick at about 3 A.M. that day." At retirement, Phil was head engineer in charge of Co-ordination, General Engineering Department.

Fred Hooven has been appointed a member of the educational council of the Institute in Detroit. . . . Much my best correspondent is Ethel **Woolfenden.** She and **Les** were in the East to attend their mutual 40th high school reunion in Freehold, N.J. This was followed by family visits, and shows in New York. Son Glen is still a professor at the University of South Florida, working on sleeping sickness carrier birds this summer for the government.

Sidney B. Waugh, certainly one of the most distinguished members of our class, died in New York on June 30. In 1929, he was winner of the Prix de Rome award for sculpture; for his services in the Army in World War II, he received the Silver Star, the Croix de Guerre, and was made Knight of the Crown of Italy; a past president of the National Sculpture Society, his work is exhibited at the Metropolitan and other museums here and abroad; he was chief associate designer for Steuben Glass for the past 30 years. **John C. Parker,** of our class, wrote beautifully in the Springfield News of their association at Tech. . . . **Michal Sorokin,** a graduate of Course VI, died July 10 at Brentwood, N.H. He had lived in Exeter, and previously was a test engineer at Submarine Signal Company, Boston. . . . As notices of the deaths of our classmates are received, one is likely to wonder whether any marked accelera-

tion is taking place. This is not yet the case for us. The most deaths which have occurred in one year were nine in 1957. In succeeding years there were six, three, seven, six, four and two so far this year. . . . We were represented at Alumni Day this year by Messrs. Arnold, Bigelow, Boyle, Burley, Chase, Connell, Edgerton, Hawkins, Houston, Marcucella, Moineau, Rasmussen, Stevens, Taggart, and Bob Wise. Almost all brought their wives. —**J. S. Harris,** Secretary, Masons Island, Mystic, Conn.

'28

I didn't think I would ever get conned into acting as class secretary, perhaps because after 30 years of writing and editing and publishing I am tired of working. But, with the resignation of **George Chatfield** and **Walter Smith** as secretary and assistant, respectively, and because **Jope** had trouble finding a hack writer who had the time to pound out class notes, I, **Hermon Swartz,** of sound body and questionable mind, accepted the nomination and along with **Ralph Jope,** President, and **Jim Donovan,** Treasurer, was elected as a class officer at the reunion in June. . . . It would be a cinch to fill page after page with anecdotes, news, announcements and descriptions that were gathered during those three wondrous days at our 35th Reunion at Harwichport. We could sum it up by stating that this was the finest, gayest, most exciting, most relaxing and the happiest reunion this class has held. We owe sincere expression of appreciation to chairman **Art Nichols,** the two vice-chairmen, **Ralph Jope** and **Jim Donovan,** and to the entire committee for their successful efforts to bring the class and families together in a beautiful environment. Present for the festivities were about 150 classmates, wives and children. We will first list those who brought their wives: J. A. Monier, Jr., Augusta, Ga.; Carl Feldman, Sharon, Mass.; A. J. Puschin, W. Barrington, R.I.; Thorwald Larson, Summit, N.J.; James Donovan, Cambridge, Mass.; Ralph T. Jope, Winchester, Mass.; Maurice Beren, Leominster, Mass.; George E. Francis, Palmyra, N.Y.; B. K. Hough, Ithaca, N.Y.; R. L. Wofford, Jackson Hts., N.Y.; Captain Desmond Shipley, Port Washington, L.I., N.Y.; Tom Harvey, Indianapolis Ind.; Arthur Nichols, Weston, Mass.; Rene Simard, Canada; Edwin Walton, Scarborough, N.Y.; David Olken, Newton, Mass.; Warren Fleming, Corning, N.Y.; J. G. Collins, Naples, Fla.; G. A. MacGillivray, Evanston, Ill.; Montague Burgess, Garden City, N.Y.; Robert P. Larson, Dover, N.J.; F. H. Rutherford, Frogmore, S.C.; Mariano Contreras, Caracas, Venezuela; Gabriel Disario, Caracas, Venezuela; Carl Bernhardt, Hamburg, N.Y.; Stanley Humphrey, Bloomfield Hills, Mich.; Abe Woolf, Brookline, Mass.; T. Hartwell; H. S. Swartz, Lexington, Mass.; Paul Johnson, Honolulu; H. C. Buntschuh, New Hyde Park, N.Y.; Frank Leverone, Newton, Mass.; John H. Draper, Jr., Canton, Mass.; Harold F. Porter, Wilton, Conn.; James E. Ure, New York City; George Palo, Knoxville, Tenn.; Alfred C. Knight, Cotuit, Mass.; Edward M. Shiepe; Carney Goldberg, Brookline, Mass.; William J. Kirk, Newton, Mass.; Victor J. DeCorte, Antwerp, Belgium; E. L. Atwood, Abington, Mass.; Richard B. Rubin, Dover, Mass.; Newton S. Foster, Rutherford, N.J.; John Stack, Huntington, N.Y.; George Bernat, Sarasota, Fla.; Walter E. Hildick, Worcester, Mass.; Don Kennedy, Chappaqua, N.Y.; Theodore B. Pierce, Teaneck, N.J.; Dr. J. W. Chamberlain, Cambridge, Mass.; Franklin McDermott, Darien, Conn.; R. E. Crawford, Needham, Mass.; R. E. Murphy, Flushing, N.Y.; Dr. Robert S. Harris, Newton, Mass.; Chris Case, Willimantic, Conn.; Claude Rice, Greenwich, Conn.; Willis Tibbetts, Reading, Mass.; C. E. Lyons, Chappaqua, N.Y.; Edgar W. Pitt, Weston, Mass.; W. R. DuVernel, Massapequa, N.Y.; R. W. Haven, Wayland, Mass.; A. F. Briggs, Beaumont, Texas; Charles E. Worthen, West Newton, Mass.; John K. Rouleau, Chevy Chase, Md.; F. C. Sweeney, Clifton, N.J., W. H. J. Phillips, New York City; D. M. Sturznickle, Houston, Texas; R. S. Slayter, Weston, Mass.

The "bachelor" roustabouts consisted of the following: William Hurst, Houston, Texas; David Mathoff, Boston, Mass.; Frank McGuane, Katonah, N.Y.; J. G. Willett, Buzzard's Bay, Mass.; John A. Carvalho, Fall River, Mass.; William S. McClintic, New York City; William J. Murphy, New York City; William Carlisle, Jr., Cambridge, Mass.; Dudley F. Collier, Billerica, Mass.; Max Bearon, Brookline, Mass.; Lazare Gelin, N.Y.C.

The spirit of the reunion can probably be best expressed by a note that **Gerry MacGillivray** sent to Jim Donovan a day or so after he reached his home. After complimenting the chairman and his committee Gerry went on to say: "I am sure that all of those who attended must echo my feelings for the happy and relaxing hours which we all spent together. Without waxing too poetical I could say: —Sweet Nostalgia! As the years roll by and God allots us the time, these meetings become more epochal and meaningful milestones, measuring out our years away from campus. Let me conclude, (with my ever optimistic nature), with hopes that our 40th will prove as rewarding as our 35th. . . . Bear with me for a few more notes. Twenty-two members of the class attended Alumni Day on June 10, most of them with wives: Carl Bernhardt, Al Briggs, Bill Carlisle, Jack Chamberlain, Earl Crawford, Jim Donovan, Carl Feldman, Warren Fleming, Carney Goldberg, Ken Gove, Thurston Hartwell, Ralph Jope, Art Nichols, Rene Simard, Walter Smith, Herm Swartz, Willis Tibbetts, Tom Harvey, Ed Walton, Abe Woolf, Charlie Worthen, Maurice Beran, and Fred Rutherford. There were undoubtedly others, whom we missed.

The number of our classmates who have retired or have at least 'slowed down' and moved to the Cape or Florida continues to increase. **Jay Collins** left the rugged Midwest and now has a home in Naples, Fla., but in the summertime moves up to Edgartown. . . . **George Bernat** has had a home in Sarasota for a number of years but maintains an apartment in New York City which his wife apparently finds to be a better summer resort than Florida. . . . **Jim Willett, Al Knight,** and **Frank Horn** visited the reunion but lived at their Cape homes. We might add that **Ed Pitt,** who substituted for **Walter Smith** as official reunion photographer, also spent nights at his Cape home with his charming wife and two daughters. . . . **Don Francis** sold his business in Palmyra and now aims to be a permanent resident of Delray Beach, Fla. . . . What, with **Charlie Richheimer** and **Roland Earle** already retired and living in the Sunshine State, maybe we had better plan to have our next reunion down there. . . . At the legal class meeting held during a few minutes of our last day at Harwichport, **John Stack** gave our class president a hard time. He insisted that we nominate Jope to be Grand Exhalant, etc., etc. Two weeks later the same John Stack appeared in 'U.S. News and World Report' of June 24 in an interview concerning the United States and the Mark III passenger transport plane; and here also John was strong and plenty definite. . . . We have more material about our classmates, of social and professional news value, but we will feed it to you in moderate, easy doses.

One last paragraph of sad news, although it is not news to many of you. **Edward T. Lockwood,** Assistant Vice-president of the American Telephone and Telegraph Company in New York City, died on June 7, of a heart ailment. He left his wife, Ann and three daughters. . . . We also regret to report the death of **Allan T. Gwathmey** on May 12 in Virginia. On the faculty of the University of Virginia, he was also a member of the Educational Council and only a month before his demise he was awarded the Thomas Jefferson Award. We plan to publish a more complete obituary in a later issue.—**Hermon S. Swartz,** Construction Publishing Company, P.O. Box 255, Lexington, Mass.

'30

During the course of our California junket last spring, we paid a brief visit to my first M.I.T. roommate, **Norman (Skeets) Dolloff,** and his family in Saratoga. The Dolloffs live up on a hill with a spectacular view of the Santa Clara Valley from their living room window. Norm is departmental chairman and professor of geology and geochemistry at San Jose State College. In addition to his administrative and teaching duties, he is writing a book on entropy and working on a pet research project—a process for the "in situ" recovery of metals from their ores. Also he is active in local public school affairs. . . . **Morris (Moe) Shaffer** is also a departmental chairman and professor. His field is microbiology and the site of his professional activities is Tulane Medical School. Morris is also chairman of the microbiology training committee of the National Institutes of Health and president of the New Orleans Friends

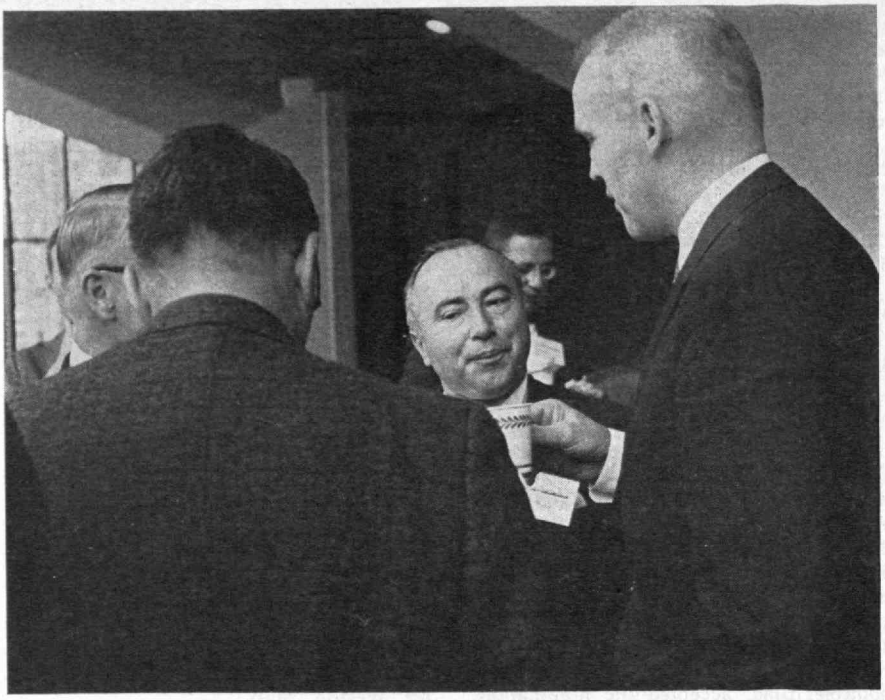
of Music, a chamber music society. As of last spring his son, Alexander, was studying Spanish in Mexico City. If my arithmetic is correct, his daughter Charlotte will be two years old at approximately the time these notes appear. . . . **George (Jeff) Wyman**'s son, Mead, '62, was married in Baltimore last June to Ann Shoemaker, a Wellesley graduate.

We report that last March **John Parmakian** was named associate chief engineer at the Denver office of the department of the Interior's Bureau of Reclamation. He started working for the B. of R. after graduation as a junior engineer, testing hydraulic structures at Hoover Dam. Subsequently, he served as assistant chief designing engineer and chief of the Technical Analysis Branch at Denver. He has written numerous technical articles and is a director of ASME. . . . In the same category is the report that last April **Ralph Peters** was appointed vice-chairman of the paper and board manufacture division of TAPPI. . . . A recent note from **Tony Savina** conveyed the sad information that our classmate and my fellow patent attorney, **Elmer Harmon,** died suddenly of a heart attack at his summer home in Grand Lake Stream, Maine, on August 30. After graduating from M.I.T., Elmer studied law at George Washington University while working as an examiner in the Patent Office. At the time of his death, he had been a member of the American Cyanamid patent department in Stamford for 22 years. He was active in Masonic work and a charter member and past president of both the Society of American Magicians, Stamford Assembly and the International Brotherhood of Magicians, Ring 97. He is survived by his wife Marion and three children, Neil, Loren and Dale. —**Gordon K. Lister,** Secretary, 530 Fifth Avenue, New York 36, N. Y.; **Ralph W. Peters,** Assistant Secretary, 16 Whitestone Lane, Rochester 18, N. Y.; **Louise Hall,** Assistant Secretary, Box 6636, College Station, Durham, N. C.; **Charles T. Abbott,** Assistant Secretary, 26 Richard Road, Lexington 73, Mass.

'31

Bill Roberts, my roommate at Tech, died at Memorial Hospital in New York on June 29. Bill was one of the finest fellows I have ever known and his passing will be mourned by all of us who knew him. He was director of administration of the National Aniline Corporation, New York, and is survived by his wife, Esther, a son, William Henry, 3d, his daughter, Mrs. John T. Detwiler, and three sisters. . . . It is also my sad duty to report the death of **Stewart B. McLeod, Jr.** on June 6 and of **Dick Sundstrom**. . . . **Emilio G. Collado** had an article in the July issue of 'Foreign Affairs' entitled, "Economic Development Through Private Enterprise." A news item in the New York Times reports that **George Bunker,** President and Chief Executive Officer of the Martin-Marietta Corporation, has been elected to the board of Sperry Rand Corporation. . . . **Parker Dunn** has been promoted to the presidency of American Potash Chemical Corporation. . . . Congratulations to **Morley Taylor** upon being awarded an honorary doctor of engineering degree by Nova Scotia Technical College, where he obtained his B. Sc. degree in 1927 before entering M.I.T. . . . **Art Fitzgerald** has been appointed chairman of the Department of Electrical Engineering at Northeastern University, and **Bryce Prindle** has been promoted to Professor of Science at Babson Institute of Business Administration. Bryce's son is serving in the Peace Corps in Nepal. . . . "My Friends, the Rats" is the title of an interesting article by **Fred Nordsiek,** which appeared in a recent issue of 'Science Digest.' . . . An announcement in the April issue of the 'American Banker' tells of **Bernard Stott**'s appointment as comptroller of First National City Bank in New York. . . . **Art Smith** is now a vice-president of Stone & Webster and **Irwin Lord** has been appointed to the Board of Tubbs Cordage Company, San Francisco. . . . A note from **A. T. (Si) Rynalski** 108 Shoreview Road, Manhasset, N. Y., tells of his retirement on February 1 after 40 years in oil refining with the Standard Oil Company of Indiana and also with the New Jersey Standard Oil Company. During his 30 years service with the N.J. Company, he was technical superintendent at the Aruba Refinery of their affiliate Lago Oil and Transport Company, Ltd. and refining advisor with the parent company.

Unfortunately, I had to be in Europe again over Alumni Day on June 10, but I understand it was a great success. Among our classmates who attended were: Gordon S. and Mrs. Brown; Lawrence B. and Mrs. Barnard; Ralph H. and Mrs. Davis; Norman D. and Mrs. Fitzgerald; Harold D. and Mrs. Gurney; Edward B. and Mrs. Hubbard; Charles E. Loucks; Albert R. and Mrs. Pierce, Jr.; Bryce and Mrs. Prindle; Charles W. Rankin; Howard L. and Mrs. Richardson; Augustyn T. and Mrs. Rynalski; Albert R. and Mrs. Sims; John R. and Mrs. Swanton, Jr.; Vincent F. and Mrs. Damiano; and Helge and Mrs. Holst. . . . New addresses reported since our last notes are: **Edward F. Abbott,** 341 Franklin Street, Harrisonburg, Va.; **Edmund G. Blake,** 298 Maynard Road, Sudbury, Mass.; **Frederick E. Brooks, Jr.,** Beacon Chambers, Room 503, 19 Myrtle Street, Boston, Mass.; **George M. Bunker,** Martin-Marietta Corporation, 350 Park Avenue, New York 22, N.Y.; **William G. Dodge,** RR #1, L'Original, Ontario, Canada; **Thomas E. Harding,** 6699-32nd Place, N. W., Washington, D.C.; **John W. Wattendorf,** 14151 Charloma Drive, Tustin, Calif.; **Fred J. Elser,** 1189 Tamarisk Road; Palm Springs, Calif.; Dr. **Philip J. Pinel,** 96 Byron Road, Weston 93, Mass.; **David V. Buchanan,** 40 Aldridge Road, Chappaqua, N.Y., and **A. Morton Plant,** U.S. Gypsum Company, 101 South Wacker Drive, Chicago, Ill.— **Edwin S. Worden,** Secretary, 35 Minute Man Hill, Westport, Conn.; **Gordon A. Speedie,** Assistant Secretary, 90 Falmouth Road, Arlington 74, Mass.



Robert E. Minot, '32 (center), with friends, is caught by the cameraman during a thoughtful pause in the activities of the Third Alumni Fund Conference.

'32

First, there are a number of promotions and new assignments during the summer to catch up on. **Wesley H. VanBuren,** IX, has been named assistant director of engineering of the Armstrong Cork Company, Lancaster, Pa. Wesley joined Armstrong in 1937 and held the positions of senior project engineer and chief project engineer before becoming managing engineer for Building Materials Products in 1949. . . . **Frederick W. Green,** IX, of

Weston, Conn., has been elected vice-president of sales of the Nash Engineering Company, South Norwalk, Conn. Frederick joined the pump manufacturing firm as sales engineer in 1935. He became sales manager in 1944 and divisional manager of industrial equipment in 1951. Since 1958 he had served as director of commercial sales; he was elected a member of the board of directors at Nash in 1960. He is a registered professional engineer in Connecticut and a member of the Society of Naval Architects and Marine Engineers and the Technical Association of the Pulp and Paper Industry. Fred lives at Cedar Hills in Weston, Conn., with his wife, Suzanne, and their five children. . . . **Harry L. Johnson,** III, has been elected district vice-president (for the 1936-64 term) of the National Association of Purchasing Agents. He is employed as purchasing agent, Major Appliance Division, Westinghouse Electric Corporation, Columbus, Ohio. Harry returned to M.I.T. as a Sloan Fellow for a year's graduate work in 1937 and began his career with Westinghouse in 1940. He became purchasing agent for the firm's new plant at Beaver, Pa., in 1946 and was appointed purchasing agent for its new plant in Columbus, Ohio, in 1951. He has been active in N.A.P.A. work in the Columbus Association since 1952 and has assisted in preparation of the NAPA booklet, "Selection of Competent Buyers." . . . **Leroy V. Honsinger,** Rear Admiral USN Retired, XIII, has been appointed manager of production and purchasing for the William Underwood Company, Watertown, Mass. He graduated from the U. S. Naval Academy in 1927 and received his M.S. Degree from M.I.T. in 1932. In his new assignment he will be responsible for general supervision of production at the company's plant at Watertown, Mass.; McKinley, Maine; the Richardson and Robbins operation at Dover, Del.; and Underwood's foreign subsidiary at Cagua, Venezuela.

Rex Seanor, II, has been elected a director in addition to his position as vice-president in charge of engineering of the Adamson United Company, Akron, Ohio. Rex has been with Adamson, a producer of special and basic machinery for the rubber, plastics, plywood, and pharmaceutical industries, since 1946. He initially was in charge of engineering for the contract department and was later advanced to assistant manager of machine design, becoming chief engineer in 1949 and vice-president of engineering in 1956. The Seanors and their son live at 257 Castle Boulevard, Akron, Ohio. . . . **Robert W. Baschnagel,** VI, has been named assistant sales manager of the Rochester Gas and Electric Corporation. Robert joined the company in 1935. He has been active in Edison Electric Institute work for many years and is chairman of the Institute's Industrial Power and Heating Group. . . . **Oliver H. Scharnberg,** XV, has been elected treasurer of the Craftsman Life Insurance Company, Boston, Mass. Mr. Scharnberg also holds the position of first vice-president and director of Craftsman. He will continue as an officer and director of Scudder, Stevens and Clark Common Stock Fund, Inc.

We have received notice of the death of **Charles H. Wiese,** IV, of a heart attack on January 25, 1963, in Cincinnati, Ohio. At the time of his death he was an associate in the office of Cellarius and Hilmer, Architects; he was previously employed in the firm of Tietig and Lee, Architects. We received our notification from Charles F. Cellarius, '16. . . . Next month we will have some personal and chatty responses from a number of classmates supplied through the thoughtfulness of **Richard M. Stewart,** who is now living in Waterbury, Conn., and is president of Anaconda American Brass Company.—**Elwood W. Schafer,** Secretary, M.I.T., Room 10-318, Cambridge 39, Mass.

'34

Members of our class attending the June 10, 1963, Alumni Day included James and Mrs. Burke, John and Mrs. Carey, Samuel and Mrs. Groves, Irving and Mrs. Geltman, Norman and Mrs. Krim, William Main, Ernest and Mrs. Massa, Henry Morss, Jr., Israel and Mrs. Nigrosh, Jack and Michael Platt, John V. Salo, Paul and Mrs. Wing, Jr., Walter and Mrs. Wrigley, Jean Raymond, Carl and Mrs. Wilson, Leonard and Joel Shapiro, Margaret Zaroodny Freeman, and Scott Miller. . . . **Noland Poffenberger,** who received his doctor's degree in physical chemistry with our class, has been promoted to the rank of research scientist by the Dow Chemical Company. He is living in Midland, Mich. . . . **Felix J. Conti** has been elected president of the Tredennick-Billings Company of Boston to succeed the late H. D. Billings. Felix has been with the company for 23 years and is a member of the board of directors. The company is one of the oldest building construction firms in Boston.

Vito P. Battista tossed his hat into the political ring for one of the two Brooklyn, New York, Councilman-at-Large posts recently created under a new city charter. He announced his candidacy on the United Taxpayers ticket, an organization that he was instrumental in founding. . . . **Po Ting Ip, "Pete,"** his wife, daughter Jean, and a friend, left Hong Kong on June 20 for a several month round-the-world tour. He spent about 10 days in New England, most of it spent in New Hampshire, but he did revisit M.I.T. and he spent one short day with me here in Barrington, R.I. He has a charming family and his daughter is remaining in the States for graduate work this coming year at the University of Minnesota. He could write a most interesting book on his life in the Orient. Pete still has a bright, vigorous, and optimistic approach to life. . . . **Russ Hastings, Jr.,** who has been assistant to the general manager of the Clark Equipment Company, Industrial Truck Division in Battle Creek, has been named director of engineering and vice-president of Clark A. G., a Clark international subsidiary with headquarters in Brussels, Belgium.

Next June will mark the 30th anniversary of our graduation. A reunion will be held on Cape Cod in accordance with the sentiment expressed at our 25th Reunion. Planning is already under way, thanks to **Carl Wilson's** initiative. This early start has made it possible to select and reserve the choicest reunion spot on the Cape—the Wychmere Harbor Club, formerly known as Snow Inn, in Harwichport. The amenities offered at this Club have made it deservedly famous among M.I.T. classes who have held reunions there each year since 1951. Last June it was the Class of 1928—perhaps their class notes will bear out Ralph Jope's enthusiastic recommendation. So we have a fine place to "reune" next June 12-14. Mark your calendar and plan to come. **Norman Krim** has agreed to serve as chairman of the reunion committee and is hoping that interested readers of these notes, in the Boston area and elsewhere, will volunteer their services as committee members, will help to persuade classmates to attend the reunion and will offer suggestions for the reunion program. Your inputs will be much appreciated. Write to Norman at Room 33-213, M.I.T., (**Walt McKay's** office), the official reunion address, or phone him at 332-0731. Thus far the committee includes, besides Norman and Carl, Bob Becker, Les Doten, Lou Frank, Walt McKay, Paul Wing, Joe Bicknell, Walt Wrigley, Mal Stevens, Al d'Arcey and Del Keily. You will be receiving within the next few days a letter enclosing a tentative reservation form as well as a request for class dues which are collected every fifth year. Respond as early as you can. We will try to keep you up to date on reunion plans in this column during the coming months.—**Malcolm S. Stevens,** Secretary, 9 Glenfield Road, Barrington, R.I.; **J. P. Eder,** Secretary, 1 Lockwood Road, Riverside, Conn.; **G. K. Crosby,** Secretary, 44 Deepwood Road, Darien, Conn.; **Harold E. Thayer,** Secretary, 415 West Jackson Road, Webster Groves 19, Mo.

'35

There is lots of news to pass along to you after three months, some old, some not so old. But, welcome back after what we hope was a fine summer and fall. We had a good representation last Alumni Day. In attendance were: Mr. and Mrs. Rufus Applegarth and Catherine, Mr. and Mrs. Ed Prohaska, Mr. and Mrs. Phoenix Dangel, Mr. and Mrs. Ben Blocker, Mr. and Mrs. Bill Abramowitz and Kenneth, Chester Bond, Leo Beckwith, Randy Antonsen, Mr. and Mrs. Peter Grand and Peter, Jr., Mr. and Mrs. Ham Dow, Mr. and Mrs. Oliver Hoag and Mr. and Mrs. Allan Mowatt. . . . **Rufus Applegarth,** who has been a pilot since 1942, flew his family to Boston in their Beechcraft Baron. Catherine completed her freshman year at Westminster Choir College, Princeton, N.J., last June and is currently well on her way to earning her flying certificate. . . . **Phoenix Dangel** has two sons at M.I.T.: Philip is a senior in Course III and worked with U. S. Steel last summer; Stephen is a junior in Course II and worked at the Institute dur-

ing the summer. . . . **Bill Abramowitz** was named "Man-of-the-Year in the Plastics Industry." . . . Susan Abramowitz is starting at Barnard College this fall. . . . The **Pete Grants** are now relocated in Nashua, N.H. . . . **Ham Dow** combined a round in the Class Golf Tourney and business with his trip back to Alumni Day. **Oliver Hoag** said that District Secretary **Hal Everett** had been needling him for months for a letter about himself. It's promised for this fall; we shall be looking forward to it, Oliver.

The Chatham Bars Inn, on the Cape, site of our 20th, has been reserved for our 30th to be held June 11, 12, and 13, 1965. **Paul Daley** made his reservation by telephone this summer to become number one on the list. **Leo Beckwith** will announce the name of our reunion chairman in next month's notes. Leo's daughter, Carol, is in first year at Goucher College, Towson, Md. . . . It has been reported that **Bart Chapman's** daughter, Jane, is a senior at Skidmore and had an interior design job in Boston last summer. Another of Bart's daughters spent last year in Turkey as an exchange student. In return they will have a girl from Laos staying with them this school year. . . . As for the **Gerald Goldens,** their pregnancy (strictly on paper) was the longest on record. The word is that their "myth" has not arrived and it is now doubtful that it ever will. This leaves your secretary with the mythical plaque for the youngest child. (Any demurrers please send birth certificate.) . . . In his phone call mentioned above, Paul Daley said he has two daughters at Dana Hall this year and will be in this area in May, 1964, for parent's weekend. Paul has been very busy. His Aurora Steel Products Company has been adding a $7½ million plant, giving them 500,000 more square feet.

Regional Secretary **Ned Collins** wrote the following letter: "Here is a report on **Al Altschuler,** IV, whom many of us knew despite the fact that he was at Rogers most of the time. As a result of my 'pestering' via letter, he called me some time ago, and we had a pleasant lunch together. Here are some of the highlights which I recall of the many interesting things he has accomplished since leaving M.I.T.: 1) During World War II he served as a line officer in the Navy, working at various EVS Bases in the South Pacific. While in Okinawa, his boss was Admiral (then Captain) Rickover, now known to all of us as the father of the atomic submarine. 2) He and his charming wife live in Highland Park, Ill., a Chicago suburb, and have three sons and a daughter. The oldest boy, Al, 3d, is studying for a doctor's degree; Larry, next in line, graduated from Wesleyan University this June, is married and plans to do graduate work at Northwestern University in political science. The youngest son, Arthur, graduated from high school this year and entered Brandeis University at Waltham, Mass., this fall. The youngest (and a real 'doll') is Marilyn, who will be a junior at Highland Park High School this fall. The family is a closely knit one. Al told me of the many interesting trips they have enjoyed to Europe, South America and Mexico, including an unusual canoe trip the entire family made in Canada. 3) Following graduation, Al entered his father's firm, a top-flight architectural and engineering company. They serve clients all over the U.S.A., concentrating on industrial plants. Their work includes, however, a wide range of other type building: hospitals, clinics, high-priced apartments, etc. In 1955 Al became a partner in the firm. 4) Al is very active in civic and philanthropic organizations, related to religious, civic and athletic endeavors. His hobbies are tennis (he's still good) and photography. 5) He says he sees some of his old classmates often such as Eric Newman, XV, '32, of Saint Louis; Larry Stein, IV, '34, of Hingham, Mass.; and of course his old buddy **Ed Lowenstein,** IV, who now practices architecture in Greensboro, N.C."

It is with deep regret that we announce the death of three of our classmates: **John T. Cheney, Jr.,** died May 15 at Fairlawn, N. J.; **Lincoln Paige** died about August 1 at San Francisco, as reported by **Sam Brown**; **George S. Bays** died about July 1 at Sydney, Australia, where he had moved from Coral Gables, Fla., in 1962. . . . The Third Annual Class Golf Tournament is down to the quarter finals with the following still in the running; Dick Bailey, Ham Dow, Sid Grazi and Bill Barker, 1962 Champion. A high percentage of the matches were played in person this year, and also a number of classmates have hosted each other at member-guest tournaments. Two, which resulted in silver trophies, were the Ham Dow—Allan Mowatt gross 78 net 60 at the Edison Club, good enough to win the seventh flight, and the Bob Forster-Allan Mowatt second flight consolation win at Essex Country Club. . . . A change of name report was received from the Alumni Office: **Robert J. Anderson,** 105 Woodchester Drive, Weston, Mass., is now legally **Robert J. Granberg."** Bob confirmed by telephone that it became official July 3, and that he was reversing a name change his grandfather made when he came from Sweden years ago.

Your secretary is foot-loose at the moment. When Atlee Corporation was reorganized early this year, a large block of stock representing a 62 per cent majority got into the hands of an opportunist who ousted me in mid-August. By next month, I expect to be able to tell you where I shall be located. In the meantime, people are telling me "This could be the best thing that ever happened to you."—**Allan Q. Mowatt,** Secretary, 11 Castle Road, Lexington, 73, Mass.; Regional Secretaries: **Edward C. Edgar,** Kerry Lane, Chappaqua, N. Y.; **Hal L. Bemis,** 510 Avonwood Road, Haverford, Pa.; **Edward J. Collins,** 904 Merchandise Mart, Chicago 54, Ill.; and **Gerald C. Rich,** 105 Pasatiempo Drive, Santa Cruz, Calif.

'36

It is with a feeling of great sadness that I report the unexpected deaths of two of our classmates: **Richard L. Odiorne** on July 6 and **Seth C. Nickerson** on August 1. Dick was founder and president of Odiorne Industrial Advertising, Inc. in Yellow Springs, Ohio. As an undergraduate he was editor of The Tech, and spent his entire business life in technical reporting and industrial advertising. He moved to Dayton from Boston in 1946 and then founded his own agency in 1948. Dick was local co-ordinator for the Experiment in International Living, active in the Community Chest, and the author of a prize-winning community history, "Why They Came." He had recently been elected president of the Miami Valley Industrial Marketers of Dayton. Some of us saw Dick briefly when he turned up at the very end of our 25th Reunion. . . . Seth Nickerson suffered a coronary in a hotel in New London, Conn., where he was just getting started as a structural engineer for the General Dynamics Division of the Electric Boat Company. He had previously carried on a construction business in Hyannis and Watertown. . . . To Dick's wife, mother, two daughters, and a son and to Seth's wife, their son, and a daughter by a previous marriage the Class of '36 extends sincere sympathy.

Bob Woodward received an honorary Doctor of Science degree from Colby College in June. . . . **Norm Copeland** has been named assistant general manager of the Film Department at DuPont in Wilmington. . . . Colonel **Roman Ulans** has been appointed commanding officer of the Army Electronics Material Support Agency. He was formerly deputy commander. . . . Colonel **Aldo Bagnulo** has left his post of Army chief of staff in Alaska to become director of facilities engineering and construction for the National Aeronautics and Space Administration's Launch Operations Center at Cape Canaveral. . . . **Kenneth Arnold** has been named chairman of the department of statistics at Michigan State University. He has been at East Lansing since 1952, having previously been on the staffs of M.I.T., New Hampshire, Columbia and Wisconsin. . . . **O. B. Falls, Jr.** has left the General Electric Company after 27 years, to become general manager of Commonwealth Associates, Inc., in Jackson, Mich., with particular interest in the field of nuclear engineering and design.

Graduate members of our class are also in the news. **Hans Lang** has been elected a vice-president of the Lummus Company. He joined the firm as manager of the Engineering Administration Department in 1962. . . . Dr. **Leo F. McKenney** has been named development manager for household products at Lever Brothers Research and Development Center in Edgewater, N.J. . . . Dr. **William B. Shockley** of Clevite Transistor Division in Palo Alto has received an honorary Doctor of Science from Gustavus Adolphus College in St. Peter, Minn. The college, founded by American-Swedish immigrants a century ago dedicated the first American memorial to Alfred Nobel—the Nobel Hall of Science. . . . An article in the Pittsburgh Press, one of a series on local religious leaders, featured the Reverend **Edward A. Cahill,**

minister of the First Unitarian Church. He is quoted as believing that the American tradition of the separation of church and state encourages voluntary lay participation in organized religious life. . . . The Illinois Alumni News last spring carried a feature article on **Louis Wetmore,** professor of city and regional planning at the University. Before going to Illinois in 1955, he had served as a visiting professor at M.I.T. while working on planning projects in Providence, and Rhode Island; these projects became models for planning programs in other states.

Alumni Day, which your secretary was unable to attend, saw six of our class reported present: Hal Miller, Roman Ulans, Ed and Rose Dashevsky, Leo and Fran Kramer, the Michael Paskowskis, and Ben and Florence Cooperstein. . . . Further personal items . . . Susan Anne Garth, daughter of **Bill** and Sally **Garth,** was married in Concord, Mass., on September 7 to Marc Walker Comstock, 2d. The bride graduated from Wellesley in 1963 and the groom from Williams in 1962. He is currently serving with the Navy in Japan. . . . George and I have announced the engagement of our daughter, Prudence, (Pembroke, '62) to David Alan Phillips of South Pasadena, Calif. A late December wedding is planned in Seattle where both of the young people are graduate students in the Chemistry Department of the University of Washington. My future son-in-law graduated from the University of Redlands in 1958 and has served in the Army. If there are any notes missing in the next two or three months you will understand why. In May I was elected treasurer of the new Unitarian-Universalist Women's Federation at the organization meeting in Chicago. This is a consolidation of two former church women's organizations and comprises some 30,000 members in the United States and Canada. These duties plus Girl Scouts and substituting in our local high school keep me busy.

Cesar Calderon reports from Puerto Rico that he has sold his ice cream business and that the Puerto Rico Sheraton Hotel is nearing completion so that by the time you read this it may well be in operation. His letter, written in late May, carried further news that his oldest daughter was completing her junior year at Manhattanville College and planning to be married in June, 1964; that his son, Cesar, was a senior at Andover and planned to enter Yale this fall; and that his youngest, a second daughter, is still in school at home. The entire family was traveling to Europe this past summer "mostly for mother and daughter to buy a few things for the wedding." . . . The accumulation of address changes is staggering: **Edward Brewster** is still in Pikesville, Md., but mail should be addressed to Reistertown and Keller Roads, Pikesville 8; **Max Brooks'** new address in Austin, Texas is 2402 Pemberton Parkway; **Thomas Brown,** c/o Mrs. Carrie Brown, 31 Bridge Street, Quincy, Mass.; Dr. **Franklin Cooper,** Haskins Laboratories, Inc., 305 East 43rd Street, New York 17; **Harry Easton** has transferred from Hoboken to White Plains, New York and the Maxwell House Division of General Foods Corporation at 250 North Street; **Henry D. Furniss** has a new position with Cargo Sales Company, 92-14th Street, N.E. Atlanta 9, Ga.; **Philip Hart, Jr.,** 8 Woodland Avenue, Bronxville, N.Y., from Kenilworth, Ill. **Tony Hittl** reports he has moved into a smaller home in Pleasantville, N.Y., at 158 Manville Road. **Charles Kennedy**'s new address in Elmira, N.Y., is Strathmont Park; **Joseph King** is receiving mail at 930 John Anderson Drive, Ormond Beach, Fla. **Joe Kingsbury** has moved from Cincinnati to Georgia—American Telephone and Telegraph Company, Hurt Building, Atlanta 3; **Elwood Koontz** to 3103 Kingsley Road, Shaker Heights 22, Ohio; Dr. **F. Philips Pike** from Arlington, Va., to 1425 Milford Road, Columbia 6, S. C. Dr. **Edward L. Pratt** is now at the Childrens Hospital Research Foundation, Elland and Bethesda Avenue, Cincinnati, Ohio; and **James Seth** has moved to Martinez, Calif., from Glendale (42 Morello Road). Also in California is **Jim Souder** from Chappaqua, N.Y. His address is 4700 Viviana Drive, Tarzana. I am still at the same old stand and will be delighted to hear from each and every one of you—**Alice H. Kimball,** Secretary, 20 Everett Avenue, Winchester, Mass.

'37

Our class was well represented on Alumni Day last June by John Fellouris; Joan and Win Gay; Marion and Joe Heal; John Nugent; Ruth and Phil Peters; Robin and Harvey Phipard with daughter, Kathy; Curt Powell; Rose and Bob Thorson. . . . **Joe Smedile** has written an article on "Fallout Protection at Military Installations" which recently appeared in "The Military Engineer." Joe was commissioned in the Corps of Engineers in 1937 and was the Chicago District Engineer prior to his present assignment as senior advisor to the director of the staff of the Inter-American Defense Board. Previously, he had served at Fort Leonard Wood as comptroller, regimental commanding officer, and chief of staff, successively. During World War II he commanded the 873rd Engineer Aviation Battalion in the South Pacific Area, and the Engineer Section, HQ. Eighth Army in the Philippines and Japan, 1945-1946. In addition to his degree from M.I.T., Joe holds an M.S. degree in civil engineering from the University of California and attended the Command and General Staff College and the Army War College.

Ken Gair has been appointed as manager of the Trailmobile tank plant in Springfield, Mo. For the past two years Gair had been manager of the Philip Carey Manufacturing Company plant in Plymouth Meeting, Pa. A native of Boston, Mass., he first jointed the Trailmobile organization in 1960 and was assigned to the Cincinnati Plant. He also had managed the Union Tank Car Company plant at Baton Rouge, La., and had been general manager for the Brunner Company, Gainesville, Ga. . . . **Walt Sherry** has recently been elected president of the Western New York Chapter of the New York State Association of Consulting Engineers. He has also been elected secretary of the Erie County Chapter of the New York State Society of Professional Engineers. . . . **Charlie Gadd** was elected president of the Metropolitan Detroit Council of the American Youth Hostels for the coming year at the annual meeting held at the McGregor Center of Wayne University. He has headed several committees over the past six years and for the past two years held the office of capital improvements vice-president. —**Robert H. Thorson,** Secretary, 506 Riverside Avenue, Medford, Mass.; Professor **S. Curtis Powell,** Assistant Secretary, Room 5-325, M.I.T., Cambridge, Mass.; **Jerome Salny,** Assistant Secretary, Egbert Hill, Morristown, N.J.

'38

Inevitably of course, as the Institute moves into its second century, the 25-year classes are getting younger and younger. Never was this more forcibly demonstrated than when 114 members, 92 wives, and 109 children of the Class of '38 descended upon Baker House June 7-10! Few there are who did not rate this their most enjoyable weekend on the M.I.T. Campus—high in interest, excitement, and challenge, and devoid of tension. For those who have not yet heard the skeletal outlines, early birds began arriving Friday noon and checked into the Baker House for a taste of student living. (We noted much more bare brick and less mahogany, an obvious sense of efficiency plus an environment of seriousness, and an abundance of private refrigerators.) Conversations and visiting extended well into the night. Saturday started off in the same vein, but shifted pace with a noontime garden reception by President and Mrs. Stratton to welcome us heartily and fondly as members of the M.I.T. family. A short stroll on the red carpet then took us to Walker for lunch with about 25 of the Faculty who remembered us from the days when a cumulative rating and the combination of the gym locker were the only two numbers of importance. Mrs. Compton spoke briefly for the group, welcoming our continual association with the Institute, and pointing out how both we and it have improved as we mature.

"Parents, Patience, and Fortitude" was the title of the afternoon panel discussion in Kresge Auditorium, as our indefatigable **Don Severance** arranged a program exposing us to the Faculty view of today's students and to the problems of understanding our own children. From here we regrouped at the Faculty Club for the Class Banquet and Dance. Sunday after church was one long outing at the Essex Country Club, with a sampler of New England weather, a plethora of sports opportunities, a chance for relaxation with friends, and a real shore dinner cooked on the rocks. Monday of course brought Alumni Day, which was reported thoroughly elsewhere. You will find a list of those who attended reunion in a forth-

coming class mailing. Our Alumni Day attendance was as follows: Harold and Mrs. Acker, Dave Baker, Howard and Mrs. Banzett, Donald and Mrs. Barnaby, Dave and Mrs. Beaman, Norman Bedford, Paul and Mrs. Black, Lou and Mrs. Bruneau, Frank Burditt, Abbott and Mrs. Byfield, Robert and Mrs. Campbell, Jack and Mrs. Chapin, Wesley and Mrs. Cilley, Tenney and Mrs. Clough, Richard and Mrs. Cole, Roscoe and Mrs. Cooper, Paul and Mrs. DesJardins, Frank Gardner, Stanley and Mrs. Gaynor, Haskell and Mrs. Gordon, Bert Grosselfinger, Kenneth and Mrs. Gunkel, Ed and Mrs. Hadley, Richard and Mrs. Henderson, Horace and Mrs. Homer, Roy and Mrs. Hopgood, Alvin Howell, Saul and Mrs. Jacobson, Demetrius Jelatis, Robert and Mrs. Johnson, Sol and Mrs. Kaufman, Frank and Mrs. Kemp, Charles and Mrs. King, Fred and Mrs. Kolb, Bernard and Mrs. Lement, Norman and Mrs. Leventhal, Arthur and Mrs. Livingston, Donald and Mrs. MacDonald, William and Mrs. Miehle, Donald and Mrs. Mitchell, John and Mrs. Petroskas, John and Mrs. Phillips, Robert Robbins, Harold and Mrs. Rosenthal, Severino Rugo, Philip and Mrs. Sellers, Donald and Mrs. Severance, Ascher Shapiro, T. Y. Shen, Tony and Mrs. Smith, Samuel and Mrs. Steere, Harold and Mrs. Strauss, Paul and Mrs. Tillson, Curtiss and Mrs. Torrance, David and Mrs. Torrans, Edward True, Richard and Mrs. Vincens, David and Mrs. Wadleigh, Milton and Mrs. Wallace, Nicholas Wheless, William Whitmore, Jack Wilber, and Albert and Mrs. Wilson.

Jack Bethel emerged with accolades for his excellent job in directing the publication of the best-seller "25th Reunion, Class of 1938." Everyone who co-operated in answering the class questionaires last spring should have by now received his copy of this "Technique Revisited" (paperback). It is of course an invaluable reference for any secretary, but I have yet to look in it for one fact without being distracted into reading extra pages! In fitting recognition Jack was elected class president in the brief business portion of the Class Banquet, succeeding **Al Wilson** who retires after the traditional single term. Al, of course, basked in the enthusiastic praise for the whole reunion program and received congratulations as the One Man Most Responsible For The Success Of The 25th, a privilege for which he paid dearly in long hours of planning, directing, co-ordinating, and plain hard work! Al, you have distinguished yourself for the capable and conscientious management of class affairs and alumni participation during the past five years. . . . Other officers proposed by Don Severance's nominating committee and elected at the Class Banquet are as follows: Vice-presidents: **Robert Campbell, Richard Muther, Frederic Reuter,** and **Harold Strauss;** Treasurer: **Edward True;** Class Agent: **Haskell Gordon;** Secretaries: **Fred Kolb, Paul Black, Ed Hadley, Norman Leventhal, Ira Lohman, Gretchen Nelson,** and **Richard Vincens.** The addresses of all secretaries are appended, and we are anxious to hear from you. As **Dave Acker** retires from a tremendous job as secretary, one we appreciate more and more even while writing these notes—we will have to work lige you-know-what to meet the standard. Will you who agree with us write Dave and tell him how much we appreciate his faithful service in keeping the class together? . . . Class Picture: This word was heard in every gathering during reunion, and refers to two things: (1) Graduation Class Picture, taken on Rogers Steps in June, 1938, including nearly the whole class in cap and gown, and lost until recently. **Jack Bethel** turned up the original, and has arranged for reproductions as requested so frequently this June; (2) 25th Reunion Class Picture, taken on Kresge Steps in June, 1963, including husbands and wives at reunion. Copies of either picture can be ordered for about $2 each; requests should be directed to the Alumni Office.

John A. Doremus has left the Westrex Division of Litton Systems to become chairman of the board and chief executive officer of Polytronics Laboratories, Inc., Clifton, N.J. Polytronics produces citizens-band equipment. John is a ham operator (W2ADE) and a pilot. . . . **Bert Grosselfinger** checked in from the sixth World Petroleum Congress in Frankfurt am Main, where he and **Arnold Kaulakis** enjoyed the proceedings. . . . **Ingenin Hechenbleikner,** who got his Ph.D. with us, has been appointed vice-president of Carlisle Chemical Works, Inc. in Reading, Ohio. He will continue his interest in exotic organic chemicals. . . . **Saul Jacobson** has been appointed senior vice-president, Brunswick Corporation and continues as group executive in charge of Bowling, Boating, and Sporting Goods Divisions. Sol has held various officer posts since 1951. . . . **Lester Kornblith** has been appointed assistant director for reactors, Division of Compliance, at AEC Headquarters, Germantown, Md. Lester had been responsible for design, construction, and initial operation of the Vallecitos Boiling Water Reactor for GE. . . . **Howard Ness** has been appointed assistant comptroller for American Steel and Wire Division of U.S. Steel. Howard was formerly manager of cost and statistics. . . . **John Proctor** has been named assistant director of administration at The Mitre Corporation. John has been technical services director, coming to Mitre from M.I.T.'s Computer and Lincoln Labs. . . . **Wilbur Rice** has been appointed president of Flomatic Corporation, Hoosick Falls, N.Y. Flomatic manufactures valves, and Will plans to emphasize product and manufacturing developments. . . . Colonel **Willard Roper** has been appointed Louisville District Engineer, Missouri. Will has been studying at the Industrial College of the Armed Forces in preparation for his new assignment.—**Frederick J. Kolb, Jr.,** Secretary, 211 Oakridge Drive, Rochester 12, N.Y.; Assistant Secretaries: **Paul B. Black,** 359 Old Lancaster Road, Sudbury, Mass.; **G. Edwin Hadley,** 115 Fairmount Avenue, Chatham, N.J.; **Norman B. Leventhal,** 367 Dudley Road, Newton Centre 59, Mass.; **Ira H. Lohman, Jr.,** 36 Garey Drive, Chappaqua, N.Y.; Mrs. **R. Gretchen Nelson,** 40 North Court Street, Providence 3, R.I.; **Richard G. Vincens,** 504 E. Lake View Avenue, Whitefish Bay, Wis.

'39

This month's class notes begin sadly, with the news of the death of **William E. Ver Planck, III,** received in a letter from Bill's brother, L. C. Ver Planck, R. D. #2, Vineland, N.J.: "Bill served in the Pacific as a first lieutenant in the Corps of Army Engineers during the war. Afterwards he went to Stanford University in California where he received his master's degree in geology. Following graduation, he worked for the division of mines of the State of California, in San Francisco, until his death. . . . Bill was married in 1954, but he and Jeannie had no children. He became ill with cancer over a year ago, and passed away on June 14, 1963." I knew Bill well, having first come to know and admire him at Exeter Academy before entering M.I.T. And the summer in between Exeter and M.I.T., Bill and I were among a crew of five boys who sailed for a month along the Maine Coast in a 34-foot cutter. Those were the days when it was a rarity for sailing yachts to have auxiliary engines, and our sturdy vessel was no exception to the pure sail rule! Bill Ver Planck, as the descendant of a long line of Salem sea captains, and one of three real sailors aboard our cutter (I was one of two landlubbers) helped handle the boat to and from docks with the greatest of dexterity, for taking on supplies and water.

A few years ago, when traveling for 'Factory' magazine, I stopped in to see Bill and Jeannie, at their nice home in Sausalito, Calif., just north of the Golden Gate Bridge. They showed me many of the sights around town on one memorable Sunday, including a visit to the Muir Woods, site of one of the Sequoia Parks. On behalf of Bill's friends in '39, I extend sympathies to Jeannie and to Bill's brothers. . . . A short news item about **James K. Farrell,** X; he has been named Manager, Process Development, Hercules Powder Company, Wilmington, Del. . . . And a longer item: **William F. Boudreau,** XIX-G, has been appointed chief engineer for refrigeration compressor development of York Corporation, subsidiary of Borg-Warner Corporation. Bill graduated from Case Institute of Technology and then received his master's with the Class of '39. In his new position at York, he is in charge of design and development of large centrifugal and reciprocating compressors applied to air conditioning and refrigeration projects as well as automotive air conditioning and hermetic compressors.—**Oswald Stewart,** Secretary, P. O. Box 1238, Moravian Station, Bethlehem, Pa.

'40

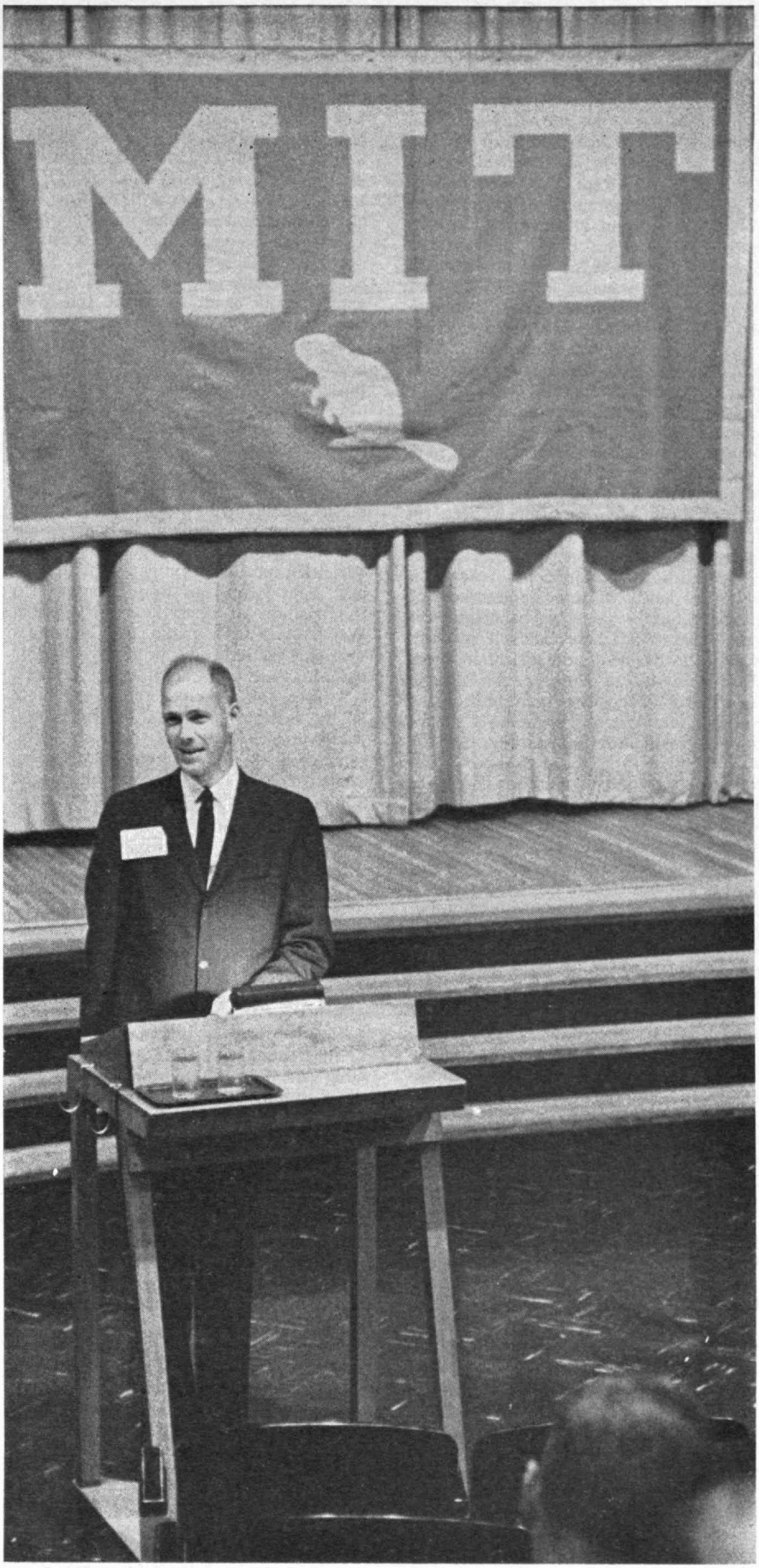
During the summer recess I received the following note from **Ted Kingsbury:** "Dear Al: I am happy to report that I

have been appointed business and financial manager of the Unitarian-Universalist Association. My office will be at its continental headquarters at 25 Beacon Street in Boston. On July 1 we will be moving to our new home at 70 Maugus Avenue in Wellesley Hills. This will be quite a change for me, and I am pleased at the prospects of this new position." As your secretary is on the Building Committee of a Unitarian Church which is in need of funds, I undoubtedly will be getting in touch with Ted in his new capacity! . . . From **Dan Karp:** "As one of your most silent correspondents, I thought that the occasion of the Second Century Fund Dinner held at the Waldorf last week would be a perfect excuse to break this long silence. The dinner was a great tribute to M.I.T. and the untiring efforts of those men who work in its behalf. I particularly welcomed the opportunity to see some old classmates: **Arnie Wight, Johnny Joseph,** and **Paul Bollerman.** Personal statistics are probably common to most of our class. I was married in '46 to a Wellesley gal (Class '47), and we now have three youngsters to keep Joyce busy. I am kept occupied as vice-president-general manager of REF Dynamics Corporation of Mineola, L.I., manufacturers of aircraft sub-assemblies, hydraulic test equipment, and precision sheet metal enclosures. Al, I hope to be a better correspondent in the future, and would enjoy seeing any of the fellows passing our way."

Jim Rumsey has been appointed manager of the general advertising and promotion section in the textile fibers department of DuPont. . . . **Carl Wohlers** has been appointed director of research of Allied Chemical's Plastics Division. Formerly he was director of research for the National Aniline Division in Buffalo. . . . **Henry Rapoport,** better known as Rap, was the guest speaker at the Puget Sound branch of the American Chemical Society meeting in May. In addition to his work as professor of chemistry at the University of California, Rap is a member of the Advisory Committee on Science Instruction of the high schools of the State of California. . . . **Peter Leckie-Ewing** has been appointed manager of research for Latrobe Steel Company. . . . Classmates attending Alumni Day festivities were John Danforth, William McDonald, Mr. and Mrs. Phil Stoddard, Leo Pach and Jim Baird. . . . Don't forget the Alumni Fund. Our 25th Reunion will be coming up in a little over a year and we want to have a good class gift.—**Alvin Guttag,** Secretary, Cushman, Darby and Cushman, American Security Building, Washington 5, D. C.; Dr. **Samuel A. Goldblith,** Assistant Secretary, Department of Food Technology, M.I.T. Cambridge 39, Mass.

'41

Ed Marden has announced the selection of **John Macleod** as chairman of the Class of 41's 25th Reunion. . . . Members of the Class of '41 attending Alumni Day on June 10 were Henry Avery and



D. Reid Weedon, Jr., '41, is this year's M.I.T. Alumni Fund Chairman, and introduced President Stratton and other speakers at the conference reported in articles beginning on Pages 17 and 26 of The Review.

daughter, Bertram M. Brown, Irwin and Mrs. Goldberg, Walter J. Kreske, Samuel K. and Mrs. McCauley, John H. Macleod, Jr., Edward R. Marden, Conrad N. Nelson, D. Reid and Mrs. Weedon, Jr., and Nathaniel Sage, Jr. . . . **Raymond G. O'Connell,** a six-year veteran on the board of education in Litchfield, Conn., has notified the Republican Town Committee of that community of his intention to seek re-election in October. Ray was born in Mamaroneck, N.Y., and has had teaching experience as an instructor in mechanical engineering at the U.S. Naval Academy, Postgraduate School, Annapolis, Md. In World War II, he served as a marine engineering specialist for the U.S. Navy Bureau of Ships. He has been employed by the Torrington Company for 18 years, serving in sales engineering assignments. Currently, he is sales manager of the Bearing Division.

Joseph H. Myers has been elected vice-president of the Stanley Works in New Britain, Conn. Joe, in his new post, assumes responsibility for the company's industrial divisions, including steel strapping, industrial components, chemical, industrial hardware and Stanley Steel of Canada, Ltd. Besides his bachelor's degree from M.I.T., he holds a master's degree in business administration from the University of Chicago. . . . **Edwin G. Kispert,** proposition manager for the Babcock & Wilcox Company's boiler division headquarters in Barberton, Ohio, was a principal speaker at the spring conference of the Northwest Electric Light and Power Association in Bellingham, Wash. Ed joined B&W in 1946 as a student engineer in the company's New York City offices. He was promoted to his present position in September, 1962. . . . **Dr. Frank K. Pittman** is the author of an article on nuclear power published in the 'Public Utilities Fortnightly' of June 6, 1963. Frank has been director of the Atomic Energy Commission Division of Reactor Development since 1959. He was on the M.I.T. faculty for several years and in charge of plutonium production at the Los Alamos Scientific Laboratory before joining the AEC in 1949.

Charles Wyckoff spoke on XR film and what it will do, at the spring meeting of the New York chapter of the Society of Photographic Instrumentation Engineers. Charles is employed with Edgerton, Germeshausen and Grier. His latest achievement is the development of the XR Film with an exposure range of more than 1:100,000,000. . . . Dr. **Ralph Landau,** a director and co-founder of Scientific Design Company, has also been made president of Halcon International, Inc. . . . **Burnham Kelly,** Dean, College of Architecture, Cornell University, was moderator at the recent session of the American Institute of Architects. . . . **Howard O. McMahon** has been named executive vice-president of Arthur D. Little, Inc., where he has successively held positions of science director, and senior vice-president in charge of research and development. He joined the company in 1943 and is a co-inventor of the Collins-ADL Helium Cryostat.

David K. Wang has been made manager of the Air Defense Division of Aerojet-General Corporation's Solid Rocket Plant, Sacramento, Calif. Dave has been with Aerojet for 21 years and headed the design team that produced the first model of the Polaris propulsion system. . . . **Leo E. Farr, Jr.** has been promoted to the position of advisory engineer at IBM. Leo joined IBM in 1949 at Endicott and is presently living at 317 Magnolia Drive, Vestal, N.Y. . . . **Kenneth A. Roe** was elected president of Burns and Roe, Inc., a consulting engineering and construction firm. He was formerly the company's executive vice-president. The company has its headquarters at 160 West Broadway, New York 13, N.Y.

Walter L. Threadgill has been appointed assistant manager of Dravo Corporation's Baton Rouge (La.) plant. He has been manufacturing engineer for the company's Engineering Works Division since January, 1962. The Baton Rouge Plant provides repair and maintenance service for towboats, barges and other marine equipment used on the inland waterways. . . . **William A. Baker,** manager of Michigan plant operations of the Welch Grape Juice Company, Inc. for the past eight years, has been promoted to the position of operations manager of Welch. . . . Let's make this a banner year for activity by promptly mailing news items to any one of the secretaries. —**Walter J. Kreske,** Secretary, 53 State Street, Boston 9, Mass.; **Henry Avery,** Assistant Secretary, 169 Mohawk Drive, Pittsburgh 28, Pa.; **Everett R. Ackerson,** Assistant Secretary, 16 Vernon Street, South Braintree 85, Mass.

'42

I noted in an issue of the Wall Street Journal sometime ago that **Carthrae M. Laffoon,** formerly chief mechanical engineer of San Diego Gas, was elected vice-president for production and transmission of that company. . . . I had a nice talk with **Pete Wiesenthal,** who is now executive vice-president of Alcorn Combustion Company. He left the Foster Wheeler Company in 1962 and, with several others, bought the Alcorn Combustion Company. Incidentally, the company's address is 230 Park Avenue, New York 17, N.Y. . . . As usual, **Lou Rosenblum** is one of my most valuable sources of information. Some months ago, by chance, he sat with William C. Morton, 3d, on a Chicago-bound jet. Bill Morton, according to the Alumni Directory, is listed as the Class of '50, but I am sure many of us will remember he spent most of his undergraduate years with us. He is responsible for satellite tracking at Hanscom Field and worked hard for the Second Century Fund. He is now living in Wellesley.

Lou also persuaded **Calvin S. Morser** to send us information regarding his professional experiences. Currently, he is chief mechanical engineer for Advanced Projects at the Marine Equipment Department, Nortronics Division, Northrop Corporation. He has been associated with this company since 1955 and has served in quite a number of positions. One of his most notable achievements was when he served as a leader in the successful design, development, and production of two high-precision celestial tracking systems for the Polaris submarine navigation system. . . . **Alan Katzenstein** sent me some information about Rudolph Hurwich who was in the Class of '43. I have passed this information along to Dick Feingold, '43 Secretary. How about some information about yourself, Al? . . . Our clipping service sent an article from the 'Master Plumber and Heating Contractor,' written by **Lee Martin,** who is president of the Northern Indiana Brass Company. Lee has been president of NIBCO since 1957, following service to the company as branch manager in both its Texas and New York plants. He then served as manager of branches and general manager before he became vice-president. Lee has become quite well-known in the plumbing and heating industry and has attained recognition as a popular and forceful speaker at the industry's trade conventions.

Bob Vyverberg, who has been with Xerox since 1951, has been promoted to associate director and will head the New Product Evaluation Group of the Research and Engineering Division. During the war, Bob had a distinguished career in the submarine arm of the Pacific fleet. An idea of the scope of his service is realized when I point out that he has a Bronze Star and the Submarine Combat Insignia with five stars. After the war, Bob went to the University of Rochester where he received a master of science degree in applied physics. He was an atomic energy project group leader at Rochester from 1946 to 1951. . . . **Bill Hecker,** formerly a partner in the firm of Wedemeyer and Hecker, has now joined the William B. Ittner Company, architects and engineers of St. Louis. This company specializes in educational and institutional architecture. Bill will be responsible for the development of commercial and industrial architectural projects. . . . I had dinner with **Bill Herman** while he was here for the Alumni Fund Conference in September. Also attending from our class were **Lou Rosenblum, Bob Fay** and **Andy Skinner.** Bill wrote a nice letter to me after the meeting, and I would like to quote a little from it: "It is amazing how a brief visit back to see the tremendous changes at the Institute helps one realize more clearly the purpose of the Alumni Fund. Summer is nearly over and the Herman family has pleasant memories of a camping trip through Nova Scotia. The children are back in school, the oldest a sophomore at Bryn Mawr. It has been a busy year, and we have many good Polaroid pictures (black and white and color) to remind us of the busy year at the shop making the film and the good time throughout the year taking the pictures."

George Toumanoff, who is technical assistant to the president of Airborne Instruments Laboratory, spent a month this summer touring Russia. He was the industry representative on a seven-man team of American metrology experts who went to Russia under the terms of the current U.S.-U.S.S.R. agreement for the exchange of visits in 13 fields of technol-

ogy. George's visit is recorded in some detail in the August, 1963, issue of the AIL Record. It is a particularly interesting report since George happened to be in Russia just at the time when the dual man-woman space flight took place. Since George speaks Russian fluently, his impressions are quite valuable. . . . **Walter J. Robbie** has been named General Manager of Eaton Paper Corporation.

I am sure many of us will remember **Frances Ross,** one of the few coeds in our class. In a brief biographical sketch accompanying an article entitled the "Three Faces of Industrial Dentistry," I found out that she served as a laboratory technician at Babies Hospital in New York from 1942 to 1944; was a research chemist at the Dental School for the following year; received her D.D.S. degree from the School of Dental and Oral Surgery, Columbia University, in 1949. She has been supervisor of dental services at Metropolitan Life Insurance Company since 1953 and is an instructor at the Columbia University Dental School. Somewhere along the way, she became Mrs. **Karlan,** and I note she has two children. She is president of the A.A.I.D. this year. . . . Dr. **William E. Catterall** has been promoted to the post of senior research associate at Esso Research and Engineering Company. Dr. Catterall has contributed significantly to development of oxo-alcohols, ethanol and isopropanol finishing, and synthetic detergents. Dr. Catterall is married and has two children. . . . **Joseph A. Crutcher** has been appointed executive director for management systems and planning organization at the Autonetics Division of North American Aviation, Inc. . . . **John G. Muller** has been made vice-president for development of Struthers Scientific and International Corporation. . . . Dr. **John W. McNall** has been appointed to the new post of manager, advanced development, by the Westinghouse Lamp Division.

Finally, I have the unhappy responsibility of reporting two deaths. **Christian A. Kampmann** died last year in his native Denmark. I have no details. . . . Captain **Leslie M. Slack,** U.S.N., who was with us while he received his master's degree, passed away in May. Captain Slack had a long career in the Navy, having graduated from the Naval Academy in 1934. He played an important part in developing and testing the Polaris missile.—**Jack Sheetz,** Secretary, Room 3-344, M.I.T., Cambridge 39, Mass.

'43

What a great class, and what a great reunion! And they came from everywhere—Larry Stewart from California, Bob Lichten and Sid Atlas from Texas, Bob Caldwell and Gus Calleja from Florida, Fred Kaneb and Bob Rumsey from Canada, Tony DelValle from Puerto Rico, and more. Reunion Chairman Ken Warden and his committee, Al Burrill, Kemp Maples, Fred Perry, Hans Walz, Leo Feuer, Bud Cruckshank and Jim Hoey did a grand job. Re-elected as class officers were President, **Jim Hoey;** Vice-president, **Kemp Maples;** Secretary-Treasurer, **Dick Feingold;** and Class Agents, **Gus Calleja** and **Jim McDonough.** Without giving you an ear-bending description of the elbow-bending good time we had, I wish to say that the comradeship and warmth evidenced at this affair indicates what a well-knit and strong class we are. **Bert Picot** took the class picture, and again sent copies to all who attended as his gift to the class. A 20th Reunion Handbook was published and distributed at the affair, at $1.00 apiece; it contains biographies and addresses, and some statistics. Copies are obtainable from the class secretary on request. Plans for our 25th Reunion gift to the Alumni Fund are underway with **Ned Swanberg** in charge of special gifts in the New York area and **Jim McDonough** in Boston. More about this subject in future notes.

Bruce Horst was elected vice-president in charge of operations for the Barber-Colman Company, Rockford, Ill., where he has been since 1946, most recently serving as production manager for all plant facilities. In his new position he supervises the operations of 11 division managers. . . . **John C. Stetson,** formerly a partner with the management consultant firm of Booz, Allen and Hamilton, joined the executive staff of the Houston Post as vice-president and general manager. . . . **Steven Heller** was named sales manager of Chemineer, Inc., in Dayton, Ohio. A registered professional engineer in Ohio, he held the position of director of engineering, Glascote Division of A. O. Smith Corporation, Cleveland, prior to joining Chemineer in January of 1963. Steve and Mrs. Heller and three children live on Hugh Drive, Washington Township, Ohio. . . . **William Louden** was elected vice-president, research and development, of the Paterson Parchment Paper Company, Bristol, Pa., which company he joined in 1952 as director of product development. He previously served as assistant sales manager of the plywood and paper division of Rohm and Haas Company. He is also a member of Paterson's Board of Directors.—**Richard M. Feingold,** Secretary, 10 North Main Street, West Hartford 7, Conn.

'44

This past summer has been a rather enjoyable one for the **Heilman** family on the shores of Long Island Sound. Maritza, age 9, can finally swim, Paul, age 4, still sinks. We hope to change this situation with another summer's activities. . . . Just before the summer vacation, I received the following note from **Ed Eaton, Jr., II:** "I am now the president of a medium sized industrial company in the field of carbon, although they make everything from primary batteries to heat exchangers, bearings, contacts, carbon brushes, electronic components such as varistors, transistorized instruments, etc. I have two boys now, aged 15 and 11, and live in Morristown, N. J. Unfortunately, I do not see many of our classmates. I see **Norm Callner,** X, occasionally in Chicago, and as you know, he is chief engineer of Liquid Carbonic. I seem to run into M.I.T. people from other classes but seldom from ours. I have been enjoying your column and look forward to our 20th Reunion." . . . This brings up the information on our 20th Reunion group headed up by **Scott Carpenter.** They have been working diligently to make the 20th an especially memorable reunion. From the grapevine I hear it is to be held at the Hotel Curtis in Lenox, Mass. Our 10th Reunion, an outstanding success, was held there in 1953. I know you will see many more commercials on this subject. . . . A note from Amstead Industries advises us that **Jim Woodburn, Jr.,** III, XV, has been appointed president of the Amstead Research Laboratories, Benson, Ill. He had been serving as director of research for this operation since 1961, joining Amstead in 1955. Jim and Helen and their three children live in Wheaton, Ill. In the 'S.P.E. Journal of the Packaging Institute' **Laurence E. Dowd,** X, has written an article on "Transition Section Length and Screw Performance." Lawrence is with Polymer Service Laboratories at Tuscola, Ill., where he is currently group leader of customer services. . . . **Richard O. Braendle,** X, who joined Dupont in 1944, has been transferred from the Industrial and Biochemicals Department in Wilmington, Tulsa and New York to the Petroleum Laboratory Deepwater Point, N. J., where he is a division head. Another note advises that **Joe Schaefer,** X, has transferred from Philadelphia to Boston, where he is assuming the position of treasurer of the Charles T. Main Company. . . . **Corwin H. Brumley,** VIII, who has been with Bausch and Lomb after serving in the Navy, has been appointed director of research and development there. . . . Dr. **Gil Krulee,** X, a professor at Northwestern University in Evanston, Ill., recently co-authored the book "Engineers at Northwestern." He has been working in the area of human mental activities and in the use of computer programming in simulating them.

Alumni day last June saw the following members of the class at the Institute; Burton Bromfield; Arthur Bryant; Earle Hodgdon; Robert Horn; Peter Matthews; Albert Reppucci; William Ritchie; E. H. Sanders; Norman Sebell; Joseph Snyder. . . . A squibb from the Springfield (Mass.) Union, advises that **Bob Cummings,** III, has been elected a teacher in the Springfield School System. Bob has been active in teaching for quite sometime. . . . **Robert I. Neel,** VI, who is supervisor for transmission and components at Stromberg-Carlson in Rochester, recently published an article entitled "Technical Advantages of Multi-Channel Stackable Multipled Equipment." He has supervised the development of message circuit dialing used in communication systems for railroads and pipelines. . . . **Bob Plachta,** XV, has recently been appointed director of administration of Charles W. Adams Associates of Bedford, Mass. Bob has been in the electronic data processing field since he graduated from the Institute. . . . I was talking this summer to a member of another class who had the mistaken idea that secretaries receive so much information they find it difficult to

boil it down to the notes. This has not been my experience during the past five years of being secretary of the class of '44. —**P. M. Heilman,** Secretary, 30 Ellery Lane, Westport, Conn.

'45

We hope you enjoyed your summer sojourns and trust that you have all plunged deeply into the usual scholastic, social, and business activities more aptly known as the daily Rat Race! We have many items to cover so here we go. The Class of '45 will hold its 20th Reunion at Snow Inn in Harwichport, Mass., the weekend of June 11-13, 1965. **Jerry Patterson** made the necessary arrangements with the Thompsons when he was on the Cape in early August. Jerry reports that many changes have been made in the physical plant, but he assures us that the cuisine is just as good if not better than ever. **Bob Maglathlin** has agreed to serve as reunion chairman and will more than likely be turning to several of you for assistance. It is not too early to start planning for 1965. Please mark your calendars.

The Soaring Sixties Reunion of 1945—should there be sufficient interest—is planned for Nassau in 1967 or 1968, thanks to a wonderful assist from **Bob Symonette.** You will recall that a Caribbean reunion was initially discussed at the Cape in 1960 and finally projected in concrete form by Prexy **Dave Trageser's** spring Class Letter. Several of you wrote Dave or myself in the spring in a positive manner. On May 27, Bob Symonette wrote Dave indicating he was in favor of a Nassau reunion. Other correspondence has followed which can be easily summarized by saying that we have a deal should you be interested. Our Soaring Sixties Special need not be held in June; in fact, local weather and cost considerations would suggest a just-off-season jaunt in the fall. Let us have your thoughts, together with some news. Our 25th Reunion will follow tradition and be an on campus affair in 1970.

In addition to his activities as Reunion Chairman, Bob Maglathlin will be our Class Representative on the Alumni Council, replacing Treasurer **Bill McKay** who has retired after several years of loyal service. We do not know whether this forced retirement has been caused by the new daughter born in May or the local bowling league! At any rate, Bill deserves a vacation. **Max Ruehrmund** and **Tom McNamara** have agreed to assist Class Agents Bill McKay and **Dave Flood** as Special Gifts Chairmen for the Alumni Fund in the New York and Boston areas. Why not make their jobs easier by mailing your annual contribution today! . . . As probably discussed elsewhere, the Alumni Association is to eliminate from class rolls approximately 11,000 alumni who attended Tech as Graduate Students only. This program will remove 96 alumni from our rolls. Based upon past performance this program will improve our percentage participation in the Alumni Fund but will reduce the total dollars contributed. Let's all help boost both sides of the ledger. . . . Max Ruehrmund had an article in the April issue of 'Candy Industry and Confectioners Journal,' which contained the following biographical data: Max has been technical service manager for the Franklin Baker Coconut operation of General Foods Corporation, Hoboken, N.J., since February, 1963. He joined Franklin Baker as an associate technologist in 1947 and advanced through a succession of assignments in research, new products development and technical service before being named to his present position. He is a member of the Institute of Food Technologists, American Association of Candy Technologists and the Packaging Institute. I might add that Max and Trudy look forward to General Food's new facility in Dover, Del., which will be just a stone's throw from their farm on Maryland's Eastern Shore.

In early May, **Jeptha H. Wade** was named a trustee of the Boston Museum of Fine Arts. Jeptha, a partner in the law firm of Choate, Hall and Stewart, is also a trustee of the Boston Arts Festival, a corporation member of the Institute of Contemporary Art, the Museum of Science, Emerson Hospital and Thom Clinic —just to name a few of his extra-curricular activities. Oh, yes, Jep was also elected a director of four mutual fund groups sponsored by Anchor Corporation. . . . The class was not well represented at Alumni Day last June; however, I know that the following enjoyed their visit: Professor and Mrs. Jay W. Forrester; Mr. and Mrs. Charles H. Hart; Tom and Betsy Hewson of New Canaan, Conn.; the Bob Maglathlins; and Warren H. Miller of Buffalo, N.J. . . . **Bill MacKenzie** received an advanced degree at Lehigh in June; unfortunately, the news service did not report the details. . . . **Bill Martin** of West Hartford continues to be most active at the local United Church of Christ, Congregational. Bill preached several Sundays during the summer while his pastor was on vacation. In addition, Bill continues as chairman of the Board of Trustees. . . . Captain **Marshall E. Turnbaugh** is president of a new firm known as South Portland (Maine) Engineering, which will specialize in heavy machine and steel fabrication. One of the first contracts was for submarine fabrications to the tune of $500,000. The Captain served a tour as nuclear power superintendent at the Navy Yard in Kittery, Maine in the late '50's.

The July 19 issue of the Cleveland Press carried a lead article on J. J. **Strnad's** Lempco Products, Inc., which formally summarized much of the information reported to you last spring. In a nutshell, J. J.'s sales have gone from $25 to $35 million in the last five years. . . . **Ed Stoltz** has been advanced to Chicago district sales manager of Johns Manville Corporation. As you might suspect, Ed is living out of a suitcase in a local motor hotel as Elinor hopefully "shows" the homestead back in Pittsburgh. The arrival of Elizabeth Louise in late March has, no doubt, compounded the house selling problems. Congratulations on both the new addition and new position; we trust you are now settled in a new home. . . . After some 15 years in the Lone Star State, **Nick** and Rosemary **Mumford** have come north. I had the good fortune of seeing them in Birmingham, Mich., in mid-August, all of two days after they had moved, and can authoritatively report that the offspring were experiencing difficulty adjusting to the way of shoes! The Mumford's address is 2410 Chelsea Lane, Birmingham, Mich. Nick is still with Chance-Vought as manager of systems engineering for a new division designated LTV Michigan Division of Chance-Vought Corp. LTV is occupying an old Chrysler plant and will initially be working on a new Army missile known as 'Lance' and on a new truck known as 'Gama Goat.' The Systems Engineering Department includes propulsion, aerodynamics, and avionics or electronics. Nick reports that the **Julian Busbys** may be moving to Dallas; also **George Upton** had the good fortune to spend a week in gay Paris in early January.

Recent address changes have **Bert Bossler** out of Tonawanda, N.Y., to Bedford, Mass.; **Dick Winkler** from Reading, Mass., to Container Corporation of America, Baltimore; **Tom Hood** to Proctor, Vt., from New York; Lieutenant Commander **Sam Moore,** U.S.C.G., from Antwerp, Belgium, to the cutter 'Hawthorne' in New London, Conn.; **Waite Stephenson** back home in Berkeley, California from Anchorage, Alaska; **Bob Wilson** from Scotia to Binghamton, N.Y., and **Graham Condie** to Wellsboro, Pa., from Syosset, Long Island. . . . **Chuck Buik** continues to enjoy Vermont and his Champlain Container and Box Corporation operation in Burlington. As he aptly reports: "Things here in Vermont continue to be booming and between work, skiing, sailing, tennis, golf, etc., we all manage to keep busy and out of trouble! Champlain Container specializes in instrument and electronic packaging." . . . **Ed Andrews** is now in Birmingham serving as area sales manager for Fischer and Porter's customers in the Alabama area. . . . Bob Symonette as one of Nassau's few eligible bachelors leads a gay worldwide life. As I write these notes Bob is sailing his International 5.5 Meter in the World Championship off Oyster Bay, Long Island. Last week he finished well up in the U. S. Championship in the same class. Earlier this summer Bob raced in the Fastnet Race at Cowes, England. Between these sailing sojourns, Bob manages the family investments in the Bahamas as well as serving as Speaker in the House of Assembly. I am tired just thinking about his activities!—**C. H. Springer,** Secretary, Firemen's Mutual Insurance Company, 420 Lexington Avenue, New York 17, N.Y.

'46

Here we go again with another year of class notes. Hope everyone had as nice a summer as we did. The summer weather in the Midwest is most conducive to pleasant weekend golf games—so much so that our planned motor trip to the East

did not materialize. Neither did the large volume of mail I expected to receive as a result of last year's pleadings. We did receive a few newspaper clippings to help us through this issue, but your letters would be most welcome for future articles. . . . Congratulations are in order to **Roger P. Sonnabend** who was recently elected president and chief executive officer of the Hotel Corporation of America. In recent years past we have chronicled Roger's rise to prominence in the hotel business, and his many outside business and welfare responsibilities, so we will not repeat the story now.

Dr. **Edward H. Bowman,** director of the doctoral program in industrial management at M.I.T., is taking an 11-month sabbatical from his duties at the Institute to become special assistant to the president of the Electronic Data Processing Division of Honeywell. He will advise and assist Honeywell EDP in the areas of management science, operations analysis, advanced management techniques, management model building and new management applications of data processing. . . . **Alfred A. D'Addieco** is supervisor, Sales Technical Lab, E. I. duPont de Nemours and Company, Wilmington, Del. . . . **Edward J. Bacon** has been promoted to research director in the nationwide scientific and technical services firm of Booz, Allen Applied Research, Inc. Ed joined the firm in 1962 as a project engineer and has worked on studies in spacecraft launch phase simulation techniques and in satellite data collection and systems analysis.

Two stout souls did drop me a line over the summer, for which I am very grateful. **Bob Nelson** wrote to invite us to look him up on our trip East. Sorry we didn't make it, Bob. Bob reports that he journeyed to Southwest Harbor, Maine, to see the recent eclipse and found the sight of the sun blacked out, with the corona streaming out all around the black center disc—quite impressive. Bob also has visited Newport, R.I., recently and reports that the Naval Base has changed considerably, with perhaps the most outstanding change being the new destroyer piers, which are a great improvement over the old moorings. . . . **Donald Burke** reports that "during V-12 days my little section of early alphabet—Arkin, Body, Bolger and Burke—hardly knew there were any classmates with names beginning with R, S, and T. It was quite a pleasant surprise to hear that **Don Robison** would be moving to St. Petersburg and even more pleasant to know that he and wife Peg would be living only a block away. Among other coincidences, he and I were both Course XVI (he kept it up, I didn't). We both worked in the Fort Worth area for a few years, gravitated back to New England, he to Boston and Hartford, I to New Hampshire. Then I moved to his native town in 1957 and now he has returned. Needless to say, we are enjoying our friendship, as do our families. With his four boys and two girls, and my three boys and one girl we have formed the MITS baseball team. We are ready to take on the METS any time. When Don Robison left United Aircraft his associates gave him water skiis as a gift. I can vouch that he was up on them and performing like a pro the first time out. If your company or city needs "big" money, see Goodbody and Company for financing. (Commercial!) I have been covering the West Coast of Florida for G. and Co., doing mostly municipal bond issue work. I have attended so many council and commission meeting that I may get an honorary title or a purple heart. And, I have found that even nicer than the cool green feel of money is the feel of a nice tax-exempt municipal bond with coupons attached. Lots of people agree. If any of you "moon race" engineers get down this way, holler, and we will be glad to show you around." That is it for this issue. Thanks for the letters, Bob and Don. Hope a few others will drop us a line.—**John A. Maynard,** Secretary, 25 Pheasant Lane, North Oaks, St. Paul, Minn.

'47

Now that the long summer is over, I can report the news that has been generated during the past several months. Alumni Day was attended by Claude Brenner, Mr. and Mrs. Robert Bryant, Mr. and Mrs. Norman Holland, Morton Loewenthal, Kenneth Marshall, Edward Peacock, Mr. and Mrs. Jack Rizika, Edwin Rosenberg, Mr. and Mrs. Harry Sherman, Mr. and Mrs. Charles Stewart, Alfred Winslow, and Adelaide Toomes Sundin. . . . **Sam H. Hong** was recently promoted to research leader in the Research and Development Branch of Western Electric Company's Engineering Division. In his new capacity he will assume charge of the Production Control Systems Department, which is engaged in operations research investigations of the production system at the company's new Kansas City Plant. . . . **William W. Happ** is currently Director of Research, American Micro Devices, Inc. He is also research professor of electrical engineering, Arizona State University. . . . **Ezra S. Krendel,** widely known for his research work in engineering psychology and author of numerous papers in the field, has been named technical director of the Operations Research Division of Franklin Institute in Philadelphia. A member of the Laboratories staff since 1949, he has supervised a variety of programs, among them large information handling systems, space vehicle control problems, electroencephalographic analysis, human dynamics research, and numerous studies directed toward obtaining mathematical descriptions of human behavior. In 1960, with Duane T. McRue, he won the Louis E. Levy Medal of The Franklin Institute for a paper, "The Human Operator as a Servo System Element." Mr. Krendel holds the S.M. degree in physics. . . . In June, the Rensselaer Polytechnic Institute awarded to **William J. Lueckel, Jr.** a doctor of engineering science degree in mechanical engineering. Bill works as a project engineer for Pratt and Whitney, holds a B.S. in Course XV, and a B.S. and M.S. in Course II from M.I.T.

John W. Kellett has been promoted to head of the conversion processes section at Esso Research and Engineering Company, chief scientific affiliate of Standard Oil Co. (N.J.). In his new post, he will have responsibility for hydro-cracking, coking, fluid catalytic cracking, hydrogen and other gas production and similar process projects. John joined the company in 1948 in the student engineering training program. His first assignments were on steam cracking, a key process in petrochemicals manufacture. He was in charge of the group that planned the Karlsruhe and Ingolstadt, Germany, and Fos, France, refineries. . . . Colonel **John U. Allen** has been named executive vice-president of the Ohio Valley Improvement Association. He has served in several capacities with the U.S. Army Corps of Engineers, both in the United States and abroad. He left the Engineers in 1961 and has since been associated with the Ross Corporation at New Orleans, where he was engaged in industrial construction. He and his wife and three children will live in Mariemont, Ohio. . . .

Eugene E. Wejman, Administrator of Value Control for the General Electric Company regulator products section, has been promoted to a new position with GE's X-ray Department in Milwaukee, Wis. He was with the G.E. insulator department in Baltimore and Pittsburgh before joining the regulator products section in 1957. The directors of Westinghouse Air Brake Company elected **George W. Smith, Jr.** a vice-president of the company. George has been general manager of WABCO's Industrial Products Division, Wilmerding, Pa., since March, 1961, and will continue in that capacity. He became associated with the company in January, 1959, as co-ordinator of planning and later as director of product planning. Prior to his association with Westinghouse Air Brake Company, he was operations manager for the Turbine Division of S. Morgan Smith Company, York, Pa. After graduation from Tech, George entered the Harvard Graduate School of Business Administration where he obtained his M.B.A. . . . **Norman I. Gold** has been appointed to the faculty at Harvard Medical School. He is also an associate in Biological Chemistry in the Department of Pediatrics, Children's Hospital Medical Center. He is now residing in Newton. Colonel **Ralph H. Baker, Jr.** is assigned as an engineer instructor in the Jacksonville U. S. Army Reserve School, an Army Reserve unit in Jacksonville, Fla. He and his wife, Barbara, live at 5526 Lakewood Circle, E. Jacksonville, Fla. . . . **Charles S. Hazard,** formerly manufacturing specialist with American Machine and Foundry Company, has been appointed director of production. He will be responsible for giving staff assistance in manufacturing and purchasing to AMF's 47 plants and 19 research and development laboratories. Charles joined AMF in 1960 after serving as general superintendent with Republic Aviation Corporation from 1956. Prior to that time he was assistant to the operations vice-president of the Studebaker Packard Corporation, Detroit, from 1953 to 1956 and plant superintendent of the Hotpoint Company, division of the General Electric Company, Milwaukee, from

1949 to 1952. Charles and his wife and their two children reside at Bayview Lane, Huntington, L.I., N.Y. . . . **Byron Lutman** is currently with the V-S, D-C and Control Products of the Reliance Company as a manager. He has written an article on the new solid-state integral-horsepower electric drive which was recently published in 'Machine Design.' Byron holds a patent on a conveyor synchronizing system that is used by several of the major automobile manufacturers.

The following change of addresses have been received: **Robert H. Blount,** Box 421, DeLand, Fla.; **William R. B. Froehlich,** 59 Mohave Trail, Medford Lakes, N.J.; **Warren Gillespie, Jr.,** Box 678, Friendsworth, Texas; **Donald B. Guy,** 1344 Santa Barbara Street, San Diego, Calif.; **Charles E. Huckaba,** Drexel Institute of Technology, Department of Chemical Engineering, Philadelphia, Pa.; **Eugene W. Kane,** Standard Oil Company, Chicago, Ill.; Dr. **Robert H. Kraichman,** Peterborough, N.H.; **C. Howard Miller, Jr.,** 924 Waller Street, San Francisco, Calif.; **Carl S. Minden,** 221 South Castanya Way, Menlo Park, Calif.; **William H. Wiehl,** Consumers Petroleum, 808 Post Road, Fairfield, Conn.; **Frank P. Zaffarano,** 22576 Locust Lane, Rocky River, Ohio; **Robert W. Warner,** 978 Moreno Avenue, Palo Alto, Calif.; Mrs. **Olaf G. Sundin,** 601 Mt. Leban Road, Wilmington, Del.; **R. Brooke Pietsch,** Auf der Halten 10, Meilin/3H, Switzerland; **Walter E. Piazza-Tanguis,** Casilla 2003, Lima, Peru; **Donald L. Lippitt,** 6 Glen Terrace, Scotia, N.Y.; **Floyd J. Kreuze,** 1822 Pheasant Avenue, N.W., Grand Rapids, Mich.; **Edward D. Kane,** 37 Magnolia Hill Road, West Hartford, Conn.; **William E. Harper,** 30 Robert Circle, Cranston, R.I.; **Dogan H. Erokan,** 4346 Will Rogers Drive, San Jose, Calif.; **Raymond G. DeBiase,** 37 Highland Park Place, Levittown, Pa.; **Edward T. Clapp,** 3308 Elizabeth Street, Erlanger Ky., Rev. **George G. Brooks,** 2431 Clearview Drive, Burlington, Iowa; **David R. Brown,** 50 Chumasero Drive, San Francisco, Calif.; **Edward L. Ghormley,** 18200 Lassen Street, Northbridge, Calif.; **Herbert R. Kaewert,** Alkaline Batteries Company, 2278 Mora Way, Mt. View, Calif.; **William J. McCurdy,** 221 Old Lane Road, Cheshire, Conn.; **Herbert L. Schmidlin,** 1314 South Alicia Drive, Appleton, Wis.; **Carmon J. Sciandra,** 265 Middlesex Road, Buffalo, N.Y.; **Robert L. Solnick,** 15830 Arbela Drive, Whittier, Calif.; **Warren M. Spear,** 513 Milberth Drive, Pittsburgh, Pa.; Captain **William H. Rowen,** 1646 Hamilton Avenue, Palo Alto, Calif.; **Worth H. Percival,** 49736 Keycove, New Baltimore, Mich.; **Stephen W. Moulton,** 1165 Pinetown Road, Fort Washington, Pa; **Robert L. Mitchell,** Celanese Chemical Company, 522 Fifth Avenue, N.Y.; **Laurent P. Michel,** 11 Old Hill Farms Road, Westport, Conn.; **Sebron M. Haley, Jr.,** 2309 Country Club Avenue, Omaha, Neb.; **Robert T. Franzel,** 7222 E. Mercer Way, Mercer Island, Wash.; **Clyde E. Heaton,** 160 Easton Road, Horsham, Pa.; **Robert L. Greene,** 4774 Stonecrest, Dallas, Texas; Dr. **John K. Galt,** 51 High Street, Summit, N.J.; **Edward W. Galeski,** Box 658, Richmond, Va.; **Robert E. Siegfried,** 12 Oakland Street, Lexington, Mass.; **J. William Reece,** 311 Salem Drive, Ithaca, N.Y.; Professor **E. Russell Johnston, Jr.,** University of Connecticut, Department of Civil Engineering, Storrs, Conn.; Rev. **Earl J. Dionne,** Queen of Apostles Seminary, 5810 Cottage Grove Avenue, Madison, Wis.; **John N. DeBell, Jr.,** 21C Bruan Place, Clifton, N.J.; **Edward T. Clapp,** 13 Church Street, Essex Junction, Vt.; **Ray M. Adsit,** 1266 Beech Street, Plymouth, Mich.; **Ben J. Vallorani,** 5009 Woodland Avenue, Western Springs, Ill.; Captain **Robert E. Sorensen,** U. S. Naval Turbine Test Station, Trenton, N.H.; Dr. **Robert E. Savage,** 25 Avenue de Villepreux, Vaucresson, Seine et Oise, France; **Hubert Flomenhoft,** 1563 Geneva Place, Columbus, Ohio; **John R. Dangl,** 222 Audubon Drive, Snyder, N.Y.; **Edwin A. Cavanagh,** 124 Andrea Lane, Arcadia, Calif.; **Raymond R. Beardsley,** 32 Kurt Road, Pittsford, N.Y.—**Martin M. Phillips,** Secretary, TYCO, Inc., Hickory Drive, Waltham, Mass.

'48

The 15th Reunion was a huge success. We quote from **Ken Brock's** enthusiastic report: "It was almost lunchtime on Friday, June 7, when the advance contingent of '48ers arrived at the Hotel Belmont on Cape Cod to start off our 15th Reunion. 'Commodore' **Phil Bragar** and Dorothy and **Bob Bliss** were not far behind, trailering two Tech dinghies from Cambridge. These, incidentally, had a full workout on Saturday, and then the winds came! High water and gusty winds upended one of the dinghies late at night, damaging the mast. Fortunately, Sunday was no day for sailing anyway! Friday was a day for visiting. Some played golf, others tennis, and still others wore themselves out on the putting green. Most, however, kept a sharp eye on the lobby to greet new arrivals, who kept coming through the cocktail hour, dinner, and far into the night. Saturday brought forth a perfect Cape June day—sunny, clear and warm. The beach was the greatest magnet. At noon we were treated to one of the highlights of the entire weekend, a magnificent buffet on the beach. Immediately following, **Marty Billett,** assisted by Tom Kane, a local newspaperman who acted as guide, led a large busload on a tour of Cape highlights.

"Thence to a class meeting (see below for the list of new officers) and a cocktail party and the banquet. **Bill Katz** was the toastmaster, with comic relief provided by all. **Herb Kurinsky** awarded sports prizes, **Don Noble** offered some statistics and awarded trophies on the attendance, and Professor Neal Hartley of the M.I.T. Humanities Department spoke to us on local history. Taking as his thesis that priceless bits of Americana are lost by neglect, he pointed out the treasures in our attics which can be invaluable in the future, and cited examples of where these had been saved, for the pleasure of all, and lost, as an irrevocable tragedy. . . . Dancing filled out the evening, with about half our numbers retiring early the better to enjoy Sunday and half talking into the wee smalls. Many continued on to Alumni Day on Monday, and were joined there by others who had not been at the Belmont. There were many who were attending their first reunion and frankly admitted they were doing so skeptically. Yet, without exception, each was glad he came and is looking forward to the 20th. If you didn't make it, plan now for 1968—you'll be glad you did!"

Altogether, 67 classmates and 58 wives attended. In order to prevent this column's taking up too many pages of this issue, we will postpone the presentation of an attendance list until the December issue. As mentioned above, class officers were elected at the reunion: President, **Benjamin J. Brettler;** Vice-president, West Coast, **Denman K. McNear;** Vice-president, Midwest, **Warren J. King;** Vice-president, East Coast, **William D. Virtue, Jr.;** Secretary, **Robert R. Mott;** Assistant Secretaries, **John T. Reid** and **Richard V. Baum;** Treasurer, **Verity C. Smith.** . . . We quote from a recent letter of Ken Brock's: "The original shipment of souvenirs contained a number of pieces that were broken in shipment. The manufacturer has now replaced these, and I have a limited number available for sale at $2 each including postage. Specifically there is a coffee mug and an ash tray—both embossed with the M.I.T. seal and the legend 'Class of '48, 15th Reunion.' Those classmates who wish to obtain one or the other should send me $2 for each piece desired and specify their choice of mug or ash tray. All proceeds after expenses will be placed in the Class Treasury. The orders should be sent to me at my home, 87 Adams Street, Medfield, Mass." Ken's letter also contained the news that **Carleton Boll** is our new class agent and that Carl and Shirley have just had a baby girl after three boys. . . . On the evening of August 21, some of the officers and men who had attended the reunion gathered for a "post-mortem" on the reunion at the Faculty Club in Cambridge. After dinner, several aspects of the reunion were discussed and thought was given to the 20th, which, as we all know, will be here before we can say "The Massachusetts Institute of Technology." **"Sonny" Monosson** has agreed to take on the chairmanship for the 20th. Also discussed were plans for several "interim" evening social gatherings to be held at Tech between now and 1968 to help keep alive in the men and wives, at least in the Greater Boston area, the reunion spirit. Present were: Ben Brettler, "Sonny" Monosson, Ken Brock, Bob Wofsey, Marty Billett, Phil Bragar, Perry Nies, and Bob Mott.

The items which follow made for a full mail bag of clippings one hot day in July. Members of '48 in attendance at Alumni Day, June 10: Mr. and Mrs. Elliott M. Bates, Mr. and Mrs. Kenneth S. Brock, Albert F. Carr, Mr. and Mrs. Benjamin G. Dann, Jr., Mr. and Mrs. Robert L. Devine, Mr. and Mrs. Marshall Dick, Mario S. DiQuilio, Mr. and Mrs. Philip M. Lally, F. C. Munchmeyer, Mr. and Mrs. James J. Pastoriza, Mr. and Mrs. Robert K. Peterson, Alfred R. Seville, Mr. and Mrs. Verity C. Smith, A. Graham Sterling, Mr. and Mrs.

Ralph Vacca, Robert H. Welsh, Mr. and Mrs. Hans U. Wydler, Haig S. Yardumian, E. William Cummings, Frank Viera, Jr. . . . **Robert P. Abelson** was promoted last spring to a full professorship in psychology at Yale. . . . **Dean S. Ammer** has been appointed director of the Northeastern University Bureau of Business and Economic Research. . . . Captain **Steven Anastasion,** USN, is special assistant to the Assistant Secretary of the Navy for Research and Development. . . . Dr. **Benjamin J. Brettler,** Vice-president of Edgerton, Germeshausen and Grier, Inc., is serving as program manager in connection with a $5.5 million contract to the firm awarded by AEC-NASA's Space Nuclear Propulsion Office for work on Project Nerva. . . . Dr. **David V. Collins** has been promoted by Shawinigan Resins Corporation to the newly created position of research specialist. . . . Dr. **A. V. Feigenbaum,** Manager of Manufacturing Operations and Quality Control, General Electric Company, New York City, has been named Chairman of the Board, American Society for Quality Control. . . . **Henry S. Gilbert,** Director of Product Management and Service Engineering, Bolton-Emerson, Inc., was author of an article on the measurement of freeness in the 'Paper Mill News' for May 20, 1963. . . . **Robert J. Hansen** was one of the authors of a paper entitled "The Use of Models in Structural Design," which was presented at a joint meeting of the Boston Society of Civil Engineers and Structural Section, B.S.C.E., held last February 13. . . . Dr. **William J. Harris, Jr.,** Assistant to the Vice-president of Battelle Memorial Institute, is a director of the Metallurgical Society.

Robert O. Hutchinson was one of the authors of a paper entitled "Magnetic Measurements with Sounding Rockets," presented last April at a meeting in Washington of the American Geophysical Union. . . . The name of **Michael J. Kami,** director of long-range planning for IBM, appeared in the May 10 issue of 'Time' magazine in an article on corporate planning. . . . **Benjamin Kessel,** President of Computer Controls Company, Inc., represented his company in an announcement in June of the development of the first complete scientific computer that combines a general purpose analog and general purpose digital computer into a single integrated system. The development of this computer was a joint effort on the part of Mr. Kessel's company and Electronic Associates, Inc. . . . **Henry W. ("Wally") Kinnan,** Director of the Franklin Institute Weather Center, and well-known Philadelphia meteorologist and TV weatherman, is director of the world's first educational weather station which opened to the public on May 14 at the Franklin Institute. . . . Dr. **Leonard C. Maier, Jr.** has been named general manager of the General Electric Company's Semiconductor Products Department. . . . Colonel **Charles C. Noble** has been named the winner of the Wheeler Medal, the highest military engineering award made annually by the Society of American Military Engineers to a member of the Corps of Engineers of the Army. The award was made for his outstanding performance as director of the Atlas D&E and Minuteman ICBM construction programs.

Harry M. Simpson has joined the staff of Booz, Allen Applied Research, Inc., as a senior engineer. . . . Dr. **Jesse Friend Scott** has become Associate Professor of Oncologic Medicine at the Harvard Medical School. . . . **E. M. Sparrow** was one of the authors of an article entitled "Free-Molecular Flow and Convective-Radiative Energy Transport in a Tapered Tube or Conical Nozzle," which appeared in the May issue of the AIAA Journal. . . . **Guilford L. Spencer** was appointed a full professor at Williams College last October. . . . Dr. **Thomas A. Vietorisz** was one of the speakers in a series of four Arthur D. Little Lectures in City Planning at M.I.T. last May. . . . **William J. Weisz** is chairman of the Electronic Industries Association Land Mobile Section. He is also vice-chairman of the National Administrative Committee of the Professional Group on Vehicular Communications of the IRE. . . . **Douglas Z. Doty, Jr.,** Vitro Corporation of America, will head a new information management department which will work on information systems and data retrieval pertaining to Navy guided and ballistic missiles. . . . A recent clipping informs that William J. Harris, Jr., mentioned above, has been nominated by the Metallurgical Society to serve as a vice-president of AIME. Army Reserve Captain **James A. Leonard** completed the reserve associate command and general staff course at the U. S. Army Command and General Staff College, Fort Leavenworth, Kansas, August 10.—**Robert R. Mott,** Secretary, Box 113, Hebron, Maine; **John T. Reid,** Assistant Secretary, 80 Renshaw Avenue, E. Orange, N.J.; **Richard V. Baum,** Assistant Secretary, 1718 E. Rancho Drive, Phoenix, Ariz.

'49

During the summer, your secretary was informed that **John G. Stevenson,** XV, has died. His latest address was Lake Forest, Ill. As yet, I have no further information, not even a date. I will try to have more information next month. . . . Attending Alumni Day, June 10, were four classmates without wives and six with: Archie H. Harris, Andrews M. Lang, Richard M. Rome and Garland Todd Thayer, 3d; and Mr. and Mrs. Frank A. Barnes, Ray E. Larson, Philip A. Lynn, Howard L. Millard, Edward H. Somma, and J. Thomas Toohy. . . . Information on the Alumni Day Cocktail Party and various items about classmates came from our stateside assistant secretary, **Fletcher Eaton.**

The Cocktail Party which **George McQueen** put on at the Faculty Club, Alumni Day, June 10, saw a fine turnout of classmates and wives as had been hoped. Your stateside correspondent tried to chat briefly with all present and it certainly was a pleasure to see so many wonderful people back together again. It wasn't possible to get personal details from everybody and to those that I missed—I'm sure sorry. But here's the list with meager details caught on the fly just as they were jotted down at the party. Gladys and Wally MacKinnon, AVCO, Wilmington, Mass.; Mary and Tom Toohy (guest of honor), IBM; he sells computers to the petroleum industry, New York City; Charlie Sutherland, C. & K. Components, has new product: timers for satellites, lives in Wellesley, Mass.; Joe Lynch, Bolt, Beranek, and Newman, Cambridge, Mass.; Mildred and Neil Morrison, Minneapolis, Honeywell—live in Waltham, Mass.; Peg and George McQueen, Polaroid, live in Sudbury, Mass.; Rosalind and Stan Margolin, A. D. Little, live in Newton, Mass.; Andrews M. Lang, American Management Association, Director of Group Research (methods of controlling administrative overhead), Saranac Lake, N.Y.; Adele and Ed Berly, President, Precipitator Corporation of America, electrostatic air cleaners, home in Newton, Mass.; Archie Harris, Autonetics Division of North American Aviation; lives in Santa Ana, Calif.; Eunice and Joe Schneider, mechanical and electrical consultant in construction field, office in Boston; Eric Howlett, sales manager for DI-AN Controls, So. Boston; Kay and Wally Row, Weston, Mass.; Paula and Ralph Huggett, business systems manager with G.E. in Lynn, Mass.; live in Beverly; Mary and Howard Millard, co-owner Pilling Engineering Company in Dedham, Mass., civil engineering consultants; built ski lodge in North Conway, N.H., on land of Frank Kennett, Jr.; have 5 children; Ed Kerwin, Bolt, Beranek, and Newman in Cambridge, Mass., 6 children; Eugene Morgan, executive vice-president; Arch Gear Works in Quincy, Mass.; also owns Blue Seal Extract Company in Cambridge; they sell aromatic chemicals and flavors; Gene lives in West Newton, Mass.; Bea and Frank Barnes, senior engineering scientist with RCA in Burlington, Mass., working on lunar excursion module.

Two letters arrived of the kind that warm a class secretary's heart; they were newsy and of interest to us all. **John Moore** writes that he is now consulting scientist in the corporate office of Lockheed Electronics in Plainfield, N.J., having for the previous three years been manager of product development and chief development engineer for the same company. He may soon work for his Ph.D. under Lockheed auspices at Princeton if all goes according to plan. Past affiliations include Raytheon and Hycon Eastern (now absorbed by Itek). With the latter, he spent an interesting eight months in Bangkok, Thailand. After the Thailand stint, he moved to New Jersey, where he became director of research and engineering at the Ascop Division of Electro-Mechanical Research in Princeton, N.J. John closes with the news that he is engaged to marry Betty Ann Jorgensen (University of New Hampshire) in October. Best wishes from us all, John, and thanks so much for the letter.

Charlie Jackson's wife, Grace, sent along a delightful letter in August which

enclosed a newspaper story announcing Charlie's late winter appointment as marketing manager for the Borg Equipment Division of Amphenol-Borg Electronics Corporation. With the new job, Charlie moves from Bensenville, Ill., to 2913 Dakota Drive, Janesville, Wis. Grace described the Janesville home (still under construction as she wrote) as having "a lovely view out the family room and master bedroom picture windows of rolling Wisconsin farm land." She stresses that they greatly enjoy the "feeding and watering" of friends and relatives who stop by on their ways from one coast to another. Grace concluded with the following four paragraphs which seem best when left uncondensed: "As a result of publicity about this new job, Charlie received a letter from **Sid Howell,** also Class of '49, who is vice-president of Industrial and Aviation Sales for the Weatherhead Company of Cleveland, Ohio. Several months later they bumped into each other in California but had no opportunity to do more than exchange greetings as each was with someone else. We will be watching for information about the 15th Reunion. The children (now 8 and 10) have been promised a trip to the New York World's Fair in 1964 and thanks to some god-parents who have so handily moved to northeastern Massachusetts, we are going to try to combine it and the reunion. . . . Oops! Almost forgot. **Aldo C. J. DiMascio,** now living on a mountainside in LaVale, Md., called from O'Hare Field last night (August 4) between planes and on a business trip to the West Coast to say 'hello' and exchange the latest news. He and his wife Ruth have become woodland gardeners and bird watchers and are enjoying their new location very much. Sorry I don't recall the company he is with."

Jack H. Westbrook shared an award from the American Institute of Mining, Metallurgical, and Petroleum Engineers for a paper he wrote with another member of the G.E. Research Laboratory, titled "Tensile Behavior of the Intermetallic Compound AgMg." . . . **Paul B. Ostergaard** has co-authored, with other members of Lewis S. Goodfriend and Associates a paper which states that "superb sound insulation may be obtained with conventional building materials by adding thin sheets of lead to them." Sounds great; or is that the wrong phrase for this kind of development?

New posts, jobs, promotions, etc. happily include the following: Dr. **Frank W. Smith,** formerly director of chemical research of the American Brake Shoe Company, is now director of research and engineering of the Mine Safety Appliances Company. **Robert Lewis Bliss** now heads the Department of Architecture at the University of Utah. . . . On the faculty of Purdue University are **Jack B. Chaddock,** S.M., S.E., Sc.D., II, and **Alden H. Emery,** S.M., Course X-A. . . . At a seminar on electronic grade copper held in October, **William R. Opie** presented a paper on the influence of production techniques on the properties of OFHC Brand copper. . . . On August 1, **Guilford W. Forbes,** S.B., S.M., XV, became a senior analyst in the data systems analysis section of the financial staff of General Motors in Detroit. Mr. Forbes leaves GM's New Departure Division in Connecticut after 10 years service. . . . **George D. Latimer** has moved up-and-across with the Ford Motor Company, from assistant divisional controller for the Lincoln-Mercury Division to the same title with the larger Ford Division. . . . **Barrie V. Potter** has become an assistant director of the products research division of Esso Research and Engineering Company, where he will be responsible for the aviation products and burner fuels section, the motor fuels section, and the advanced lubrication project. . . . **Harold E. Williamson** now heads up a new projects office in Palo Alto, Calif., for the Vitro Corporation of America, with home offices in Silver Springs, Md.

With the military, Brigadier **General Pete C. Hyzer,** S.M., II, holds his new rank as division engineer of the U.S. Army Corps of Engineers of New England. . . . In the Navy, Captain **Russell S. Crenshaw** took over as commanding officer of the 'U.S.S. Springfield,' the guided missile light cruiser which serves as the flagship for the Commander, Sixth Fleet. . . . Navy Commander **George R. Reynolds** has graduated from the Air University War College at Maxwell AFB, Ala. . . . Remember the 15th Reunion and plan to come. Best wishes to all as we start a new reporting year.—**Frank T. Hulswit,** Secretary, Arthur D. Little, Ltd., 197 Knightsbridge, London SW7, England; **Fletcher Eaton,** Assistant Secretary, 83 Herrick Road, Newton Center 59.

'51

Your secretaries have been very delinquent of late, and we humbly apologize. In the various activities given below are indicated some of the preoccupations, but they do not really excuse our sins. . . . Our latest notice about **Clark Abt** placed him as manager, Strategic Studies, Advanced Development Laboratory, Missile and Space Division, Raytheon. He has been in the middle of several studies of arms control and disarmament inspections. . . . **Gerry Austen** is now a member of the faculty of the Harvard Medical School besides his position as surgeon at the Massachusetts General Hospital. In 1961-62 Gerry was with the National Heart Institute, U.S. Public Health Service. . . . **Jack Barcinski** is assistant sales manager, Bakery Products, in the Fleischmann Division of Standard Brands Sales Company, where he has been employed since 1958. . . . **Walker Bowman** is senior research engineer in the research department of the Amoco Chemicals Corporation at Whiting, Ind. . . . **Lawrence E. Bray** has started a new architectural firm under his name in Sheboygan. He and his partners were formerly with Stubenrauch and Associates. They intend to specialize in the design of schools, churches, and municipal buildings. Another new venture is a partnership of planning consultants which includes **Robert Bryan** in Fairfield, Conn. . . . **Fred Bumpus,** who has been reinsurance manager of Boston Manufacturers Mutual Insurance Company since 1957, has been elected a vice-president. Fred holds a law degree from Fordham and is a member of the Massachusetts Bar.

Julian Bussgang has extensive experience in communications with Lincoln Lab, Harvard, and RCA. Now he is president of Signatron, Inc., Lexington, Mass., a small research and consulting firm specializing in the theory of handling electronic signals, which he organized in February, 1962. . . . **Terence Butler** is an assistant professor of mathematics at Rutgers. . . . **David Caplan** was with Burroughs from 1952 to 1957, working on digital computers and is now with RCA as leader of a group in the Systems Integration and Advanced Programs Activity of Digital Communications Engineering. International Tel. and Tel. has formed ITT Intelcom, Inc., to provide engineering and technical assistance in planning military systems for the Department of Defense and has named **Albert Cookson** vice-president and general manager. The new group is located in Baileys Cross Roads, Va. **John Costas** has been with G.E. since 1951 and is now consulting engineer in the Heavy Military Electronics Department of the Defense Electronics Division, Syracuse. Lieutenant Colonel **Handford Cummings,** U.S.A.F., is assigned as an aeronautical engineer with the Air Force Missile Test Center at Patrick AFB, Fla. **William Donald,** who has been with C. D. Howe Company of Montreal since 1951 except for three years on a project in Pakistan, is working on the design of a $25 million ore and coal terminal in Brazil. **John Dowds,** General Manager and Partner of Anabaco, an independent Oil and Gas Producing firm in Oklahoma City, is serving as president of the M.I.T. Club of Oklahoma. **Hans Eichenberger** is director of research for the general lines products of Ingersoll-Rand in Piscataway Township, N.J. **Hugh Faville** has been serving as the field representative for the Twin Cities Metropolitan Planning Commission. **Kenneth Forsberg** is Engineering Department head for advanced studies, Sperry Gyroscope. **Thomas Friedrich** has been made technical manager for the Strathmore Paper Co. of West Springfield, Mass. Formerly he had been with the Beckett Paper Co. of Hamilton, Ohio, and earlier with the French Paper Co. of Niles, Mich. He and Mary have five children. **William Gable** is serving Aircraft Armaments, Inc. as director of engineering. In addition, he is serving M.I.T. as a member of the Educational Council and as a director of the local M.I.T. Club. **Robert Goddu** is supervisor of the Polymer Research Division of Hercules Powder Co. in Wilmington and has been honored with an appointment to the advisory board of 'Analytical Chemistry,' a journal of the American Chemical Society. Seatrain Lines, Inc. has made **Harlan Haller** its vice-president in Charge of Engineering. His responsibilities include all engineering and research and development plus the maintenance and repair of vessels and terminals. **Joseph Hammond** is an associate professor of electrical engineering at Georgia Tech, where he

has been working on analog computation and servomechanisms. **Kenneth Harms** is vice-president, Engineering, Polymer Processes, Inc. and general manager of the Resins Division. He has been with the Reading, Pa., corporation since 1953. **Frederick Hertha** is Treasurer of Columbia Cellulose Co., Ltd., of Canada. **Thomas Hoffman** is with Arthur D. Little, where he has done work on very low temperature refrigeration of devices, such as the maser. **George Hughes,** Assistant Professor of Electrical Engineering at Purdue, has been working in linguistics on the problem of developing machines that will interpret the human voice. **Robert Johnson** has joined the architectural firm of Buehrer & Stough in Toledo. **Harold Jones** has been directing the erection division of the Rudd Company of St. Paul, a firm formed in 1959. **Robert Keefe** has been made an associate of the architectural-engineering firm of Elliston, Hall, McCallister and Stockwell of Cincinnati and is in charge of the firm's branch office in Covington. **Kenneth Kopple** served as a member of the Organic Chemistry Section of the General Electric Research Laboratory in Schenectady while a Fellow under the Guggenheim Foundation. He has been on the staff of the University of Chicago Chemistry Department since 1954. **Arnold Kossar** is director of corporate planning of the Curtiss-Wright Corp. He has been with the company since 1955. **Emerino Marchetti** has been appointed Manager of Data Processing and Operations of the M. W. Kellogg Co. A resident of Yonkers, he has been with Kellogg since 1956. **Forest Monkman,** Vice-president of Walworth, has been moved to Oakland, Calif. Dorr-Oliver Inc. of Stamford, Conn., has moved **C. Stanford Olsen** from the sanitary sales division to become manager of the process group of the government projects division. **Robert Perry** is chairman of the School of Chemical Engineering and assistant to the president in charge of long-range planning at the University of Oklahoma. He is also editor-in-chief of 'Chemical Engineer's Handbook,' a position which was once filled by his father. **William Phillips** is a research supervisor in the Central Research Dept. of DuPont. **Alan Roberts** has been named Head of the MITRE Corporation's NORAD Command System Dept. Previously he worked on Whirlwind I and on the SAGE air defense system. **Charles Schramm,** transferred two years ago from Esso Research to Colloids, Inc., of Newark, and he now serves as vice-president. **Bernard Schwartz** has joined the research staff of RCA Laboratories at the David Sarnoff Research Center in Princeton where he will be associated with the Computer Research Lab. **Leigh Secrest** has been promoted to chief scientist in Department 27, Convair Division, General Dynamics in Fort Worth. National Distillers and Chemical Corp. has **James Shepherd** as its manager of the management systems department. Prior to joining that corporation in 1961 he served as a senior auditor and then a management consultant with Price Waterhouse. **Mark Smith** is research vice-president for Geophysical Service, Inc., a petroleum exploration firm which is part of the Science Services Division of Texas Instruments. **Hank Spaulding** is now vice-president of Cabot, Cabot & Forbes and is responsible for the over-all coordination of the Technology Square office and research center. **Joseph Tamsky** has left his post with the Hartford, Conn., Redevelopment Agency to join the firm of Morton Fine and Associates of Hartford. **Roger Weatherbee** is chief project engineer, environmental conditioning systems and turbomachinery for Hamilton Standard Div. of United Aircraft in Hartford. **Charles Whitney** is now associate professor of astronomy at Harvard and physicist at the Smithsonian Astrophysical Observatory. **Robert Whittier** is manager of development for Monsanto Chemical Company's Building Products Department at St. Louis after serving as a member of that department at Springfield, Mass. **Bernard Widrow,** besides being Associate Professor of Electrical Engineering at Stanford, is president of Memistor Corp., manufacturers of memistors and adaptive computing machines (a memistor is a resistor with memory.) **Dick Willard** is still with the admissions office at M.I.T., but he has taken to moonlighting with a small firm he and others at Tech formed for consulting and for school and college class scheduling.—**Richard W. Willard,** Secretary, 17 Sargent Road, Winchester, Mass.; **Forest C. Monkman, Jr.,** Assistant Secretary, 6529 Hollis Street, Oakland 8, Calif.

'53

The past summer was highlighted by our 10th Reunion, taking place at the Chatham Bars Inn on Cape Cod June 7th through 9th. In attendance were Jack and Rosemary Batter, Jack and Sharon Becker, Dave and Shirley Berg, Jay Berlove, Pete and Ann Bixler, Fred and Sandi Brecher, Chuck and Gretchen Buntschuh, Jay and Anna May Cahill, Dick and Ann Chambers, Ben and Peggy Coe, Ed and Carol Colbeth, Bob and Janis Colton, Jeff and Priscilla Davis, Dule and Maureen DeCloux, Merrill and June Ebner, John and Mikki Ehrenfeld, Lou and Rose Marie Eyster, Bob and Mary Fahey, Ken and Virginia Fettig, Don and Lea Fischer, George and Nancy Fuld, Gil and Jane Gardner, Norm and Joan Gardner, Bob and Miriam Godfrey, Bill and Jackie Gouse, Wolf and Berna Haberman, George and Ruth Hegeman, Sid and Grayce Hess, Ed and Eleanor Hickey, Rollie and Joy Johnson, Don and Carol Jongbloed, Russ and Judy Kidder, John and Erma Kielty, E. Kingbury, Jonas and Karin Kjellberg, Jim Klupar, Allan Lazarus, Betty Ann and Fred Lehmann, Mike and Carol Levy, Dick and Carolyn Lindstrom, Dick and Betty Marciano, Mike and Mary Maresca, Jim and Martha Mast, Bob and Elaine McDonald, Joe and Janet Molloy, Bill and Betty Peet, Jack Pinkovitz, Bob Piper, Ro and Nancy Plante, Art Redman, Jack and Barbara Roop, Dick Scott, Tom and Margaret Diane Shaw, Paul and Virginia Shepherd, Harold and Felicia Sherman, Joe Spracher, Bill and Mary Ann Spring, Joe and Julia Stevens, Jack and Harriet Stewart, Jim and Miriam Stoddard, Lionel Thibodeau, Jack and Jane Trevett, Turk and Elinor Turkanis, Joe and Pat Urner, Jack and Louise Webb, Bruce and Rosemarie Weston, Marty and Ann Wohl.

For the over 70 classmates who came with their wives and children or girlfriends (still a few bachelors left) the event was memorable and thoroughly enjoyed. Perfect weather was combined with good food, athletics, resting and getting re-acquainted with friends. At the Saturday night dinner-dance, we heard Professor Robert Wood, who gave an excellent talk on "Suburbia"—as a way of life, and its political, social, and economic implications. For his presentation, Bob drew upon the results of our Class Questionnaire which painted an interesting picture—to be presented in future class note columns. In appreciation of his lecture and in lieu of money, Bob was unanimously elected an Honorary Member of the Class of 1953.

The class expressed its appreciation to the previous officers: **Paul Shepherd,** President, **Marty Wohl,** Secretary, and **Frank Turcotte,** Class Agent. A new slate was elected for the 1963-1968 period. **Marty Wohl** turned in his pen for the gavel; **Dick Chambers** became Vice-president; and the writer has the pen. Our new Class Agent is **Dick Lindstrom,** and a new office of Treasurer has been filled by **Bob McDonald.** The Reunion Committee consisted of the following and their wives: Dick Chambers, John Ehrenfeld, Tom Faulhaber, Gil Gardner, Dick Lindstrom, Paul Shepherd, Marty Wohl, George Hegeman and your secretary. The reunion was in all respects a success. Although the statistics indicate that 10 per cent of us are non-drinkers, we could not find them. In any event every effort was made to "toast" the past 10 years and beckon the next. We want to know about what trouble you are getting into or out of —so please write whenever you get a chance—like now.—**Norman R. Gardner,** Secretary, 100 Memorial Drive, Cambridge 39, Mass.

'54

Here we are, beginning our 10th year as members of the Alumni Association. It won't be too long until we become genuine "old grads." And it won't be even that long, until we amble back to the Boston area for our second (10th) reunion next June. We shall have more to say about the reunion in future issues. . . . In the meantime, we have a few news items which have trickled into St. Louis since last July. **Paul Drouilhet** and his wife have announced the birth of their third child (second daughter), Susan Bratton, on July 18 in Cambridge, Mass. . . . Rather late word has arrived that **Jerry Cohen** was the 1961 winner of the Robert Lansing Hardy Medal of the American Institute of Mining, Metallurgical and Petroleum Engineers. This national award is given for "exceptional promise" in a man under 30 in the fields of "mineral beneficiation; extractive, physical or

adaptive metallurgy; and metal processing." Jerry, besides being an award-winner, is an assistant professor of materials science at Northwestern University.

In other developments, **Sooren Soovajian** has completed a master of science degree program in management engineering at Rensselaer Polytechnic Institute, under the sponsorship of his employer, IBM. Sooren is a staff engineer in quality engineering for that revered old firm. He, his wife Virginia, and their daughter Anita are living in Saugerties, N.Y. . . . **Bob Wilson,** who toils for the Huyck Felt Company, has recently been made sales engineer for the Middle Atlantic States for his employer. Bob, his wife and their three daughters are living in the Philadelphia area. . . . **Tom Chase** has acquired an M.D. from the Yale School of Medicine, and has been appointed a research fellow in neurology at Harvard Medical School. He will work primarily at Massachusetts General Hospital. . . . **Bob Hobart,** who has a Ph.D. in physics from the University of Illinois, has left his job as assistant professor of physics at Dalhousie University, Halifax, Nova Scotia, and has joined the research staff of Battelle Memorial Institute in Columbus, Ohio. At Battelle, Bob will spend his time looking at imperfections in crystals. . . . And last June, our class was represented at the 1963 Alumni Day at Tech by **Bob Wagner** and his wife, and **Vic Pesek.**

During my annual two weeks' visit to Washington, D.C., for Uncle Sam in August, I found **Ray Freeman** still commanding the same desk he had a year ago. The first day I was there, I invited him to the Officers' Club for a beer after work, forgetting that he, as a bachelor, had had much more practice at that sort of thing than I. I found that I am just not in shape for a dozen beers before dinner any more. During the rest of the two weeks, I approached the Club a little more cautiously. The last time I saw Ray before heading back to the quiet of the Midwest, he was still playing the piano and trying to decide whether to keep his soft army job or go out into the cold, cruel civilian world. My boss during my two weeks duty was Major Dick Koenig, '50, who complained that I had missed a few columns during the past year. I'm glad somebody at least looks for this stuff, even if he does belong to another class. Anyway, Major, Sir, here's a column for you to read, and by George, I'll have that shoulder patch sewn on for sure by next August, Sir. And, with the Major's permission, that will end this month's effort. Let me hear from you all.—**Edwin G. Eigel, Jr.,** Secretary, 4945A Sutherland Avenue, St. Louis 9, Mo.

'55

"A perfect day for the event," class members present at the Alumni Day festivities in June agreed. In addition to your Boston correspondent, John Farmer, Bill Friedman, Sandy Goldman and Janet Guernsey were there; and Bob Craven and Jim Ecker brought their wives also. Although the **Robert Greene** family was too late for Alumni Day, they did vacation at Weymouth later in the summer, celebrating Bob's recent promotion to executive vice-president of Ovenaire, Inc., Charlottesville, Va. . . . **Ella** and **Dick Gardner** took a late summer vacation in the British Isles and were last heard from shivering in Glasgow. But they are presently doubtless shivering in Michigan again. Dick is now assistant director of the Oakland County Planning Commission; Ella is still with Chrysler, but she has moved to their General Office in Highland Park. . . . After two years abroad **William Nichols,** S. J., is beginning his teaching and research career in physics at the University of Detroit. This past year he spent as a visiting research assistant at the theoretical physics institute of the University of Vienna calculating the electrical conductivity of plasma by many-particle methods; the previous year he devoted to studies in ascetical and pastoral theology at Münster, Germany. . . . **Lee Zuker** was in Cambridge during the summer for the two-week course in instrumentation at Tech. Lee is chief of the gyro test lab in the Guidance and Control Division at Holloman AFB, New Mexico, and is thinking of returning to school for a doctorate after his tour of duty there—following the example of Hunter, seven, and five-year-old Pamela, both in school now.

From the electronic tube department of Sylvania in Seneca Falls, N.Y., came the announcement in June of **Don Welsh**'s appointment to the new position of merchandising co-ordinator of renewal sales for tubes, semi-conductors, and microwave devices. . . . **Irwin Gruverman** was appointed in August to the new position of head of special sources department at New England Nuclear Corporation in Boston; he is responsible for the development and production of high level radioactive sources. Irv and his wife and two children are living in Needham. And speaking of Needham, we need'um some news. Sorry, apologies for the wretched pun, but we do!—Co-secretaries: **L. Dennis Shapiro,** Aerospace Research, Inc., 130 Lincoln Street, Boston, Mass.; Mrs. **J. H. Venarde (Dell Lanier),** 2401 Brae Road, Wilmington, Del.

'56

Welcome to the eighth season at the old typewriter. Note that the booklet, 'M.I.T. Revisited,' mailed to contributors to the Second Century Fund, contains a two-page spread of the "Most Wanted Class" in the Rogers Lobby plus many other informal pictures of our classmates. . . . **Phil Battaglia** was promoted to captain in the Air Force and is now stationed near Lincoln, Neb. . . . **Ray Bowen** is now teaching in the Chemical Engineering Department at the University of Wisconsin. . . . **John Cowles** reports that he has received his doctorate in chemical engineering from the University of Michigan and is now working at the Lawrence Radiation Laboratory in California. . . . **Jim** and Betsy **Fleming** were recently blessed with their third child, Mark Andrew. Jim is a product manager for Corn Products in New York. . . . **Paul Levine** has received his doctorate in physics from Cal Tech. . . . **Bob Lukacik** left Pennsalt Chemicals and is with Cabot Corporation in Boston. Bob and Joyce have two sons, John and Mark.

Tom C. Nelson has been promoted to captain in the Army and is stationed in the Washington, D.C., area. . . . **Dick Norwood** has been promoted to advisory engineer at IBM's General Products Division Development Laboratory in Endicott, N.Y. Dick has been at Endicott since receiving his doctorate in mechanical engineering from Tech in 1961. . . . **Karl Pearsons** writes that he is still with Bolt, Beranek and Newman in Cambridge and has just bought a house in Wayland, Mass. Karl and Kitty also announce that a second son, Todd Newman, arrived on May 24. . . . **Regis Schultis** left Pennsalt Chemicals last spring and now works for the Commercial Development Department of Escambia Chemical in New York. Regis has contributed several of the news items for this article. . . . **Ken Stevenson** has received his doctorate in chemistry from Brown University. His thesis was on 'base catalyzed epoxide rearrangements.' . . . **Harris Weinstein** is with the law firm of Covington and Burling in Washington, D.C. . . . I hope that all of you will take advantage of the new M.I.T. Alumni Center of New York located on the 14th floor of the United Engineering Center near the United Nations.—**Bruce B. Bredehoft,** Secretary, 16 Millbrook Road, Westwood, Mass.

'57

I'm now back in the Boston area and settled down in my second year at the Harvard Law School. My summer in New York was very enjoyable and, when measured in terms of the volume of news I learned about classmates, particularly rewarding. I had the pleasure of dining one evening at the apartment of **Lee Fister** and his wife, the former Judy Wurstner (Wellesley, '62). **Bob** and Valerie **Murphy** were also present. Valerie, whose maiden name is Fauteux, is a graduate of the New England Conservatory of Music, Class of 1960. Lee picked up his S.M. at Tech in 1960 and joined Union Carbide. After nine months of training in Boundbrook, N.J., and in New York, he was assigned to the corporate analysis group in the Manhattan headquarters office. A recent reorganization resulted in Lee's transfer to the company's plastics division, where he is now engaged in financial control work. Judy keeps herself busy working as a security analyst for General Reinsurance and preparing gourmet-quality meals. (Lee is still surprisingly quite trim!) Most of Lee's spare time is spent on a newly developed hobby, oil painting. Some of his works to date are very fine. Bob Murphy entered the Air Force under his R.O.T.C. obligation after receiving his S.B. The first half of his military career was spent in the Far East with a group that reviewed the combat

preparedness of foreign countries receiving military assistance from the U.S.; the latter half was spent in Albuquerque, N.M., with the underground atomic testing program. Bob returned to M.I.T. for his S.M. and then joined Esso International in New York where he works on problems of crude oil supply. Before their marriage in 1962, Valerie sang professionally (mezzo soprano) including an engagement with the Sante Fe Opera Company. Bob and his wife now live in the Bay Ridge section of Brooklyn; in their spare time they study Chinese at the Chinese Institute in Manhattan.

Other classmates whom I saw last summer were **Elliot Wolk, Al May,** and **Mal Jones.** Elliot recently joined the excellent Wall Street firm of Salomon Brothers and Hutzler. Alan May, I learned, not only married a very charming girl (the former Marcia Wolfson), but also one that can cook delicious chicken! Mal Jones is now working on his Ph.D. at M.I.T. in a combined program under Course VI and Course XV. He has a parttime job with Tech's Project MAC which is researching in the field of time-sharing computation. . . . Two promotions to be noted. **Alan Kotliar** is president and chief executive officer of Sola-Basic Products, Ltd., an affiliate of Basic Products Corporation, and **Ira Zames** is Administrative Coordinator for Pilot Radio Corporation. . . . I need some news and would enjoy hearing from you now. Please note my new address,—**Frederick L. Morefield,** Secretary, 1A Acorn Street, Boston, Mass.

'58

Hello again after a long summer and a wonderful class reunion. Total attendance was 141—120 people in Boston on June 8 and 9 and 21 people in San Francisco on June 15 and 16. This constituted one of the largest reunions ever held. On the financial side the whole effort netted our class treasury about $100 increase. Taking all factors into account, the reunion set several precedents—the West Coast gathering, attendance, and having the eastern location in Boston. Some of the personal highlights were **Stephanos Hadjiyannis,** who came the greatest distance (England); **Jim Graham,** who has the most children (5); and **Mike Kenyon,** who attended both East and West reunions.

We received a note from **Mel Copen** who writes the following from India: "Guess you thought that I just disappeared. Well, in a way I did. Linda and I are now living in Ahmedabad, a textile city of approximately 1,000,000 souls (15,000,000 if you count animals) approximately half way between Bombay and Delhi. We left the States in February and after a really wonderful trip through the Orient, arrived in this land of sun, cows, and frustration. I'm working as a consultant to the Ford Foundation on a project in which Harvard is involved. At the same time I am hoping to get my doctoral thesis completed. The project involves the establishment of a school of business administration here. It will give a two-year program, leading to an MBA and will be patterned on the HBS. M.I.T. is involved in a similar project in Calcutta. It's really a fascinating experience, both in the work and the new living conditions. The mainstay of many American homes, TV, is unknown here, and the telephone is a semi-rare critter. As for pizza pie, or a good thick steak, I think they commit people for dreaming such fantasies."

Toni Schuman reports that **Gary Blakely** graduated from the Harvard Business School in June and is now with Hexceo Products, Berkeley. . . . **Ed Bell** graduated from the Stanford Business School in June, 1962, and is now with Autonetics. They had their second child, a boy, recently. . . . **Jim Austin** is now at Wright-Patterson, having finally gotten out of the Air Force. He is the father of two children. . . . **Dave Holt** is at Caltech getting a doctorate in aeronautical engineering. . . . **Ben Chantry** is working at Aerojet General in Azusa and lives in Covina. . . . **Stan Gaves** got out of the Navy and spent the summer touring Europe. He plans to return to M.I.T. for a master's in M.E. **Jim Braman** is still in the Air Force stationed in Wisconsin. . . . **Larry Ogden** married the former Mary Alice Bisbee and has a daughter, Daryl, aged 2. They live in Fair Oaks while he works at Aerojet in Sacramento. . . . **Vic Teplitz** is working at the Rad Lab at Cal in high energy physics. He and his wife, Doris Rosenbaum, also a physicist (from Wellesley and the University of Maryland Graduate School) are living in Oakland. . . . **Bill Veeck** taught algebra and geometry in Phoenix until June. He has now embarked on a year of study abroad (in the outer islands of Hawaii and possibly the South Pacific and Australia) armed with only one suitcase and a bicycle (i.e. he is currently voluntarily unemployed). . . . **Bill Hall** will get his Ph.D. in theoretical physics shortly and plans to work until he can get back to teaching.

Ken Whipole has been appointed supervisor of the Facilities Analysis Section for the Finance Staff of Ford where he went after graduation. Aside from his Ford accomplishments, he has accumulated four children. Another Ford promotee is **Charles Talbot,** who has become supervisor of International Forward Plans for the Finance Staff. He received his MBA from Harvard in 1961, is married to the former Nancy Steih and has a two-year-old son. . . . **Allan Rodolitz** announced the birth of a daughter, Naomi Susan in June. Another June event was the marriage of **Fred Kissner** and Jeanne Claire Horvath in New Haven with **Dean Webber** as best man.—**Cornelius Peterson,** Secretary, 4 Rambling Brook Road, Upper Saddle River, N.J.; **Antonia Schuman,** Western Associate, 22400 Napa Street, Canoga Park, Calif.; **Kenneth Auer,** Midwestern Associate, 12955 Harlon Avenue, Lakewood, Ohio.

'59

The summer months have brought several interesting letters and news items about '59ers. **John Brackett** writes: "After leaving M.I.T., where it seemed I did little during the last few months but edit 'Technique,' I arrived in a somewhat more tranquil setting at Purdue University. After four years of work, I managed to pick up my Ph.D. in physical chemistry. I am going to be working in Bethesda, Md., at Research Analysis Corporation, primarily in the computer sciences area. I am engaged to Colleen Woodward, a graduate student here at Purdue in biological sciences; we expect to be married in June, 1964. I do have one piece of information about another '59er. Last September, I went to the wedding of **Frank Manak,** III, to Patricia Rodgers in Cleveland Heights, Ohio. He is now working as a patent lawyer for U.S. Steel in Pittsburgh, after graduating from Western Reserve Law School a year ago and being admitted to the Ohio bar." . . . From Hackensack, N.J., **Bill Burke** writes: "Almost as soon as I got over the shock of graduation I was married in Brookline, only a few miles from the Institute. My wife, Jan, is a caseworker for the local Welfare Board. I soon went to work as an editor with McGraw-Hill and began to obediently grind out a newsletter on management and finance in a weekly business magazine. That lasted a year and half until I was lured into a wonderful new fairyland of business airplanes. So, for the past three years, I've been swept along in the bizarre guise of airplane salesman; a vocation which, at first, brought forth a curious mixture of sympathy and giggling from my friends. Even though the tingle of adventure has worn off, I still find it an enthralling and worthwhile job. Actually, I'm having the time of my life selling twin engine Beechcrafts in greater New York and New England for Atlantic Aviation Corporation. Between trips to the airport I've had time to do some serious writing and am halfway through my first book; it will be published next year."

Bill Jobin, Course I, wrote us an interesting letter from Salisbury, Southern Rhodesia. Bill writes: "I'm in Africa for two months as a temporary advisor for the World Health Organization. Along with four other WHO personnel, we are assisting the Ministry of Health in a Bilharzia Control program. Bilharzia is a tropical parasitic disease, transmitted by a fresh water snail. From here I go to Egypt and maybe to Caracas, then finally back to Puerto Rico to wind up my two years with the U.S. Public Health Service. . . . In September I return to Boston on a fellowship to study for my doctorate in Public Health at Harvard. I hope my wife Sally and our daughter Maria and I will have an opportunity to see some of the old M.I.T. gang in the vicinity. . . . The M.I.T. Club of Puerto Roco is quite a group and we have had dinner a few times with **Luis Fernandez** and his wife Carmen. Not much contact with other alumni. Of the Course I bunch, **Pablo Brosons** is still in Argentina, **Fred Smith** is working copper mines in Chile near Santiago, **Kofi Frimpong** and Shirley spent a year in Ghana but have gone up to Toronto with a sanitary engineering firm." Many thanks for the letters.

Thomas Dubauskas, Course VI, and Katherine Ann Balanda were married in

Connecticut. **Robert Orintas** was best man: Tom is currently working for the research and development department of the Bristol Company. . . . In Washington **Mortimer Francis O'Connor,** now in the Air Force, was married to Harriet Ann Oswald. They will be living in Tacoma Park, Md. . . . In New Jersey, **Joseph Johnson** and Harriet Lewis were married. They are living in New York where Joe is an assistant teacher at Columbia. . . . May saw the wedding of **George Moss** and Mary Elizabeth Lawrence. George is a research engineer with the Naval Ordnance Laboratory in Washington. . . . Back in Boston, **Donald Hills Avery** and Katrina Van Voost Hanson were wed. . . . On the military scene, **Bob Clark** graduated with honors from the U.S. Air Force Squadron Officer School at Maxwell Air Force Base. . . . **Dwight Moody** has been assigned to the Air Training Command at Reese Air Force Base in Texas. Dwight is an instructor pilot. . . . **Dave Taylor** is an Air Force weather forecaster assigned to Don Muang Air Base in Bangkok, Thailand. Bob, Dwight and Dave are all first lieutenants. . . . Several '59ers also received degrees during the past few months. **Michael Ash** received his Ph.D. in math from Princeton. . . . **Mike Nash** received his M.B.A. from Harvard. Mike graduated from the Business School with distinction, in approximately the top 13 per cent of the graduating class. . . . On the West Coast, **Ken Kellerman** received his Ph.D. in physics from Caltech; and **Lane K. Branson** has been appointed an instructor of physics at Los Angeles State College. . . . From the Alumni Association come some very interesting figures on our class participation in the Alumni Fund. Only 25 per cent of our class contributed to the Fund on the basis of 1960 figures. The average contribution was just over $10. I hope we have better class participation in the years ahead. . . . Please keep writing and inform me of your activities and plans.—**Robert A. Muh,** Secretary, M-424 Arlington Towers, Arlington 9, Va.

'61

The postcards included in **Ira's** letter last spring have continued to come in slowly, with a total of only 56 on hand at this time. Still, this gives me a lot to go on, and I will spread them out over the next few months, reporting news in approximately the order I got it. Thanks to all who used the cards. . . . **Dorsey Dunn** completed his first year at Harvard Business School last May and married Susan Evans (Wellesley '62) on June 1. . . . **Millard Firebaugh** is back on campus for three years in Naval Architecture, following completion of a tour of Navy duty. . . . Lt. **Roger Whitman** wrote from Korea (38th Ordnance Company, DS, APO 358 San Francisco) where he is "learning first hand about the Far East." Prior to going to Korea, he was at Aberdeen Proving Ground in Maryland. . . . **Al Klancnik** is also with the Army, at Fort Sheridan, Ill. . . . **Peter Hertan** writes cryptically: 'I live in upstate New York, town of Vestal. Why do I keep getting the New York City M.I.T. Club notices?" I don't know, Pete, maybe they want you to come to a meeting.

M. Lynne Rich, a Course VIII co-ed, writes: "I am presently teaching physics and related subjects (physical science) at Newton High School, Newton, Mass. I will be there next year as well, teaching a course in physics with calculus, along with regular P.S.S.C. physics. This summer I will be married to a grad of the Class of '60, Gordon S. Mutchler. He is presently working for his Ph.D. at Tech, in physics." . . . And **Tom Lawford, Jr.** writes that he is working for NASA at Langley Field, Va., on VTOL instrumentation. He was at the University of Virginia last spring, as a guest of NASA. . . . **Art Delagrange** writes from the U.S. Naval Ordnance Lab at Silver Spring, Md., that he is not married and is "enjoying life, every golden drop of it." . . . I too am enjoying life—will write more next month, when my wife and I will have completed moving into our new apartment in West Campus, and I will have been through the wringer of predoctoral exams, for better or for worse. —**Joseph Harrington, 3d,** Secretary, Apt. 1610, Westgate, Cambridge, Mass.

ENTERING M.I.T. with the Class of '67 were three students whose fathers are alumni in academic posts. From the left, Wallace Wrigley, Walter Wrigley, '34, Robert Crout, Prescott D. Crout, '29, Ruth Beckley and Laurence E. Beckley, '42.

'63

A United States Army release states that **Dale W. Covington,** who took a master's in Course VI with our class, recently completed a course for infantry officers at Fort Benning, Ga.

Many of you forgot to send back your information cards last spring. If it slipped your mind then, why not drop me a post card now and let us all in on what became of you. There were 179 cards returned and the following is a breakdown of that fraction of the class: 129 are going to grad school this fall; 40 at M.I.T., 22 at Ivy League schools, 5 at Stanford, 3 at Berkeley, and 2 at Caltech. The Ivy League breaks down to 4 each at Columbia and Cornell, 3 each at Brown, Princeton, Penn, and, of course, Harvard, and 1 each at Dartmouth and Yale. There are 3 in law school, and 6 in med school. Of the business schools, Harvard walked away with 10. Other grad schools across the country claimed 38. . . . Three people who turned in cards are now in the Armed Forces, 2 in the Navy and 1 in the Army. The Peace Corps also has 3 new recruits.

The working world is larger by 37, with 7 more undecided. 2 have gone overseas to work, and 3 are working in government labs. Lincoln Labs has 2, I.B.M. now has 5, and Rocketdyne has 2. Other companies employ small groups of classmates totaling 23. . . . As I said before, these statistics are gathered from the cards you sent in last spring. In order to add to the common pool of knowledge, if you didn't send a card in, or the info is now outdated, please drop me a card. Anything even halfway newsworthy will probably get printed during these early days. Mail any cards or letters to the secretary.—**Bob Johnson,** McCulloch Hall, F-41 Harvard Business School, Cambridge, Mass.

M.I.T.'s Show in New York's Center

LINCOLN LABORATORY panels explained Project West Ford and other experiments to guests at the opening this fall of the M.I.T. Alumni Center in New York. Professor William H. Radford, '32, answered questions.

A COMPASS from a sunken ship that was located by sonar was part of Professor Harold Edgerton's exhibit.

A SATELLITE that carried an M.I.T. Laboratory for Nuclear Science experiment interested many Alumni.

SPACE VEHICLE models and other National Aeronautics and Space Administration displays extended along one wall of the exhibition hall in the United Engineering building overlooking United Nations Plaza.

Varsity Athletic Events Coming Up

Soccer

Nov.	5	Boston University	2:00	Home

Cross Country

Nov.	4	Easterns	Away
	11	New Englands	Franklin Park
	18	I.C.A.A.A.A.	New York

Sailing

Nov.	2, 3	Schell Trophy	Home
	9, 10	Fowle Trophy	Home

Basketball

Nov.	30	Trinity	8:15	Away
Dec.	3	Boston State	8:15	Home
	7	Wesleyan	8:15	Home
	11	Brandeis	8:15	Home
	13	Norwich	8:15	Home
	17	Harvard	8:00	Away
	19	Northeastern	8:15	Away

Fencing

Dec.	7	Brandeis	2:00	Away
	11	Harvard	7:00	Away
	14	Bradford-Durfee, Rochester	2:00	Home
Jan.	11	Trinity	2:00	Away
	18	Army	2:00	Home

Hockey

Dec.	5	Massachusetts	7:00	Home
	7	Vermont		Away
	13	Vermont		Home
	14	Trinity	7:00	Home

Squash

Dec.	6	Adelphi	4:00	Home
	6	Navy	8:30	Home
	7	Dartmouth	2:00	Home
	13	Amherst	3:00	Away
	14	Williams		Away
	17	Harvard	7:00	Away
Jan.	10	Yale		Away
	11	Wesleyan	2:00	Away
	24	Army	7:00	Home

Swimming

Dec.	4	Massachusetts	8:30	Home
	7	Columbia	2:00	Away
	11	Tufts	8:30	Away
	14	R.P.I.	3:30	Home
Jan.	11	Williams	4:30	Away
	13	Adelphi	4:00	Home
	18	Bowdoin	3:30	Home

Indoor Track

Dec.	7	Northeastern	12:30	Away
	10	Boston College	7:00	Home
	13	Bates	6:00	Away
	19	Tufts	6:30	Home
Jan.	11	K of C Relays		Boston
	18	Columbia	12:30	Home
	25	Boston A.A. Relays		Boston

Wrestling

Nov.	30	Tufts	3:30	Home
Dec.	3	Harvard	8:00	Away
	6	Connecticut		Away
	14	Williams		Away
	19	Coast Guard	7:00	Home
Jan.	8	Brown	8:00	Away
	11	Amherst	3:30	Home
	18	Wesleyan	3:30	Away

Sailing Techers Bring Home Championships

Sailing trophies were won by M.I.T. people from Brazil to Lake Michigan this summer and fall. Joseph R. Duplin, Athletic Assistant to the Sailing Master at M.I.T., is shown above admiring, with his wife and daughter, the trophy he won in the Star Class World's Championship Race on Lake Michigan September 14. In a five-day competition, Joe sailed his "Star of the Sea, IV" against 68 others from 20 nations.

William V. Clark, Jr., '42, a former professor, won the U.S. catamaran championship last year. This year, Allen and Peter J. Hubbard, '57, took it away from him on Buzzard's Bay with a boat they had designed and built in their backyard.

In Sao Paulo, Brazil, Robert P. Smith, Jr., '50, and Robert A. Huggins, '52, after winning their U.S. championships in, respectively, Dragon class and snipe class, represented the U.S. at the Pan American Games. Mr. Smith took a third place, and Mr. Huggins won a silver medal for second.

Derek B. Bell-Jones, a graduate student, placed second in the North American Firefly Championship, sailing "Fireman," a boat which has won this event twice. . . . Jeffrey Gold, a M.I.T. Club junior member, this summer won the Midget Championship of Massachusetts Bay and with it the Walter C. "Jack" Wood trophy.

Musical Programs at M.I.T. in November

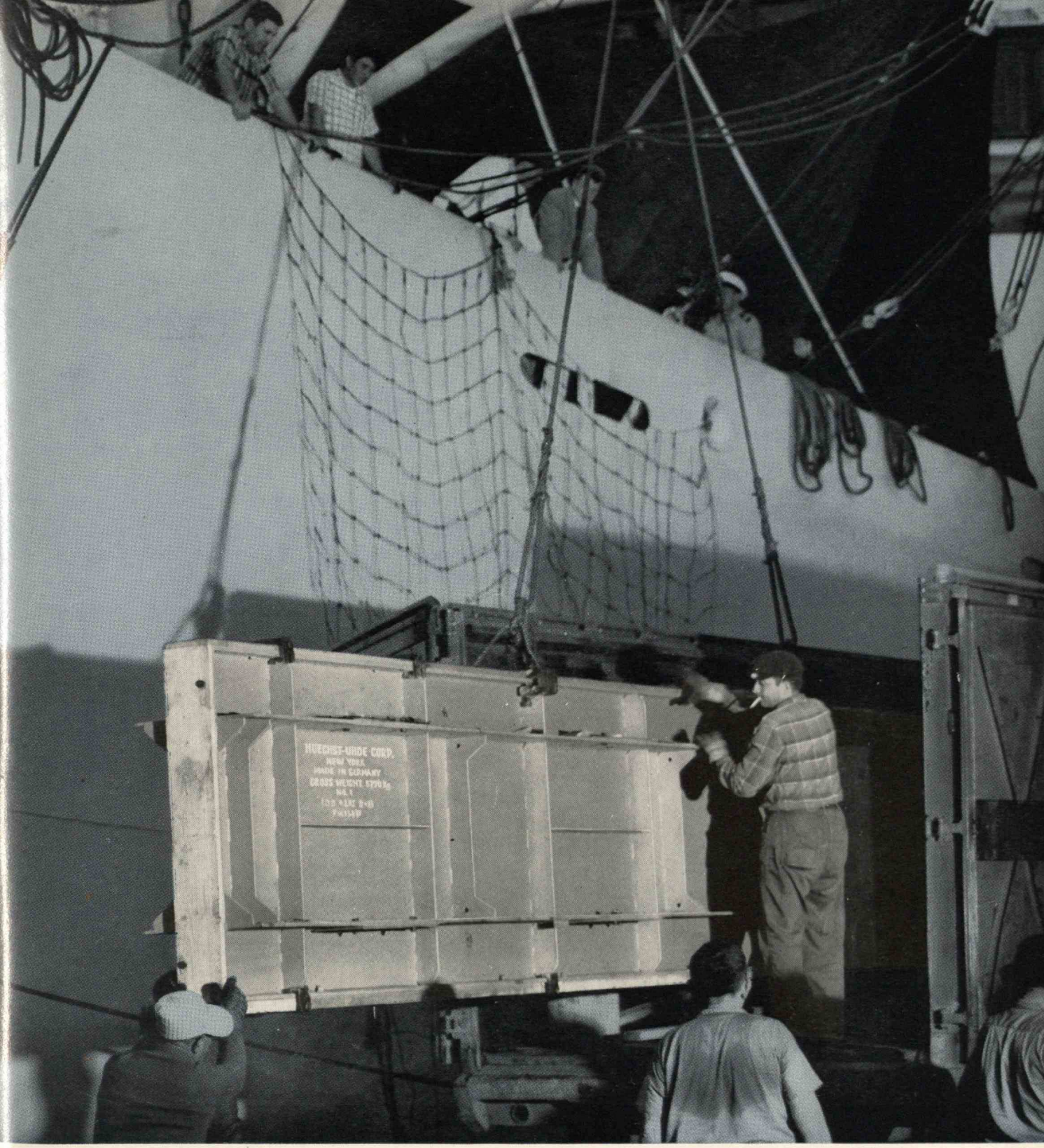
November 10 Kresge Auditorium
Humanities Series Concert: The Lenox String Quartet playing works of Haydn, Schubert, and Bartok. 3:00 P.M.
Tickets: $2.50

November 17 Kresge Auditorium
M.I.T. Choral Society, with soloists and the Cambridge Festival Orchestra; Klaus Liepmann conducting Haydn's "Theresa Mass" and Stravinsky's "Symphony of Palms." 3:00 P.M.
Tickets: $2.50, $1.50

November 20 Kresge Auditorium
Organ Recital by Wilma Jensen, of Oklahoma City, Okla. 8:30 P.M
Tickets: $1.50

November 23 Kresge Auditorium
M.I.T. Concert Band Concert. 8:30 P.M.
Tickets: Free in advance in Lobby Building 10; $1.00 at door.

December 7 Kresge Auditorium
M.I.T. Symphony Orchestra Concert. 8:30 P.M.
Tickets: Free in Advance in Lobby Building 10; $1.00 at door



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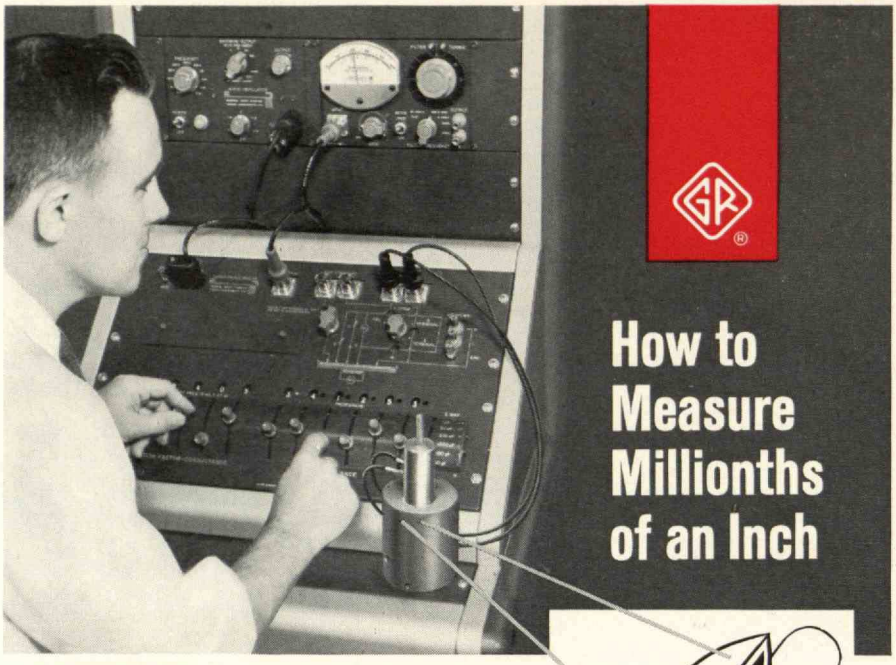
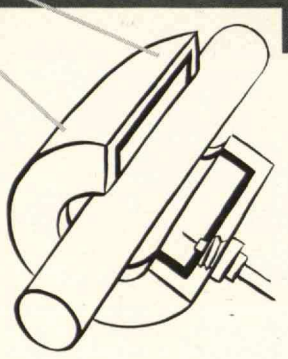


How to Measure Millionths of an Inch



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This Bridge, used widely in electrical standardization laboratories, is priced at $1475. If you would like more information, please write.

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